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GREAT LAKES TECHNOCRAT

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★ Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspect of Science; and Presenting the Specifications for Total Victory in America's War Against Fascism. ★

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TECHNOCRACY DIGEST

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The World is My Country

To Do Good Business My Religion
by Sergeant Meade

Nearly everybody has heard the story about the three little pigs. It is a pleasant little fairy tale with a moral to it. Two of the little pigs were improvident of the future. They sang and danced and played all day long. They built their house of paper and laughed out loud when the third little pig warned them that the big bad wolf would get them if they didn't mend their ways. Well, the big, bad wolf came around one day and ALMOST got the two merry little, silly little pigs.

The article presented below is about pigs also. But there the similarity ceases. It's not a story about merry little pigs; but about the big hogs of national and international trade. It's a story about 'Free Enterprise' and its super-governments called CARTELS. It's about the harpies of world trade; and their menace to America's future. This is not a pleasant fairy story but a grim record of facts. It has no happy ending. If such is desired, it will have to be supplied by alert, intelligent American citizens. What are YOU doing about it?

Not Me, I'm Not The Man

Last summer we listened to the keynote speech of the Republican party convention. It was a smooth presentation of catchy phrases, a clever manipulation of words that brought applause and cheers from the thousands in the Chicago Stadium. We thought back over the events of the last few decades and wondered how intelligent American citizens could show enthusiasm and approval of what was said. Not that it was an inferior political speech; it wasn't. As a political speech it was excellent, but as a presentation of anything pertinent to the American way of life of our day and the immediate future it 'smelled.'

There were statements that Americans, especially those returning from the fighting fronts, did not want just

jobs but that they wanted opportunity. Well enough. But then in a statement that brought thunderous applause the keynoter said that opportunity and jobs were to be found only through the operations of free enterprise, with business unfettered and unrestrained by government bureaucrats. Business, he said, had too long failed to make it clear to the people that the future hope of America lay in the free enterprise system.

Possibly free business enterprise has been too long in demonstrating its advantages; perhaps it should have proved that it and only it could provide *not only jobs but opportunity* throughout the years between 1929 and 1939. Perhaps it should have taken that opportunity to prove that it could produce superior goods and distribute them to all Americans in order to provide the abundance the

speaker said was possible only under the manipulations of free enterprise. It didn't. And that fault of omission was not because the multitudes who "believe in" free enterprise didn't *want* to be prosperous. The fact of the matter is that the survival of business enterprise depends not upon the production and distribution but upon the very "economy of scarcity" that the keynoter condemned.

The threat of abundance on this earth brought into being the cartel, that national and international business agreement to maintain that level of scarcity most compatible with the greatest level of profit for those on the "in." The cartel is one manifestation of the death struggle of private enterprise and private advantage at public expense. It not only effectively eliminates a potential condition of abundance of goods but also lowers the quality of goods that are permitted on the market. And if any true "free enterprisers" attempt to "muscle in" by producing and distributing goods of higher quality, they are soon disposed of by means which, although not approved of in Sunday School, are necessary parts of free enterprise.

Let There Be Light

For an illustration, we need go no further than the limits of our own national borders. Cartel agreements with major foreign producers of electric lights have freed for a few American concerns the entire American market while at the same time eliminating free competition, in fact

all competition, in foreign markets. When the American market became saturated with electric light bulbs, some new way had to be developed to maintain or increase the business volume. This was done by lowering the *quality of the products* so the consumer would need to buy more replacements.

In 1932 a General Electric engineer wrote to executives of the company:

Two or three years ago we proposed a reduction in the life of flashlight lamps from the old basis on which one lamp was supposed to outlast three batteries, to a point where the life of the lamp and the life of the battery under service conditions would be approximately equal. Sometime ago, the battery manufacturers went part way with us on this and accepted lamps of two-battery lives instead of three. This has worked out very satisfactorily.

We have been continuing our studies and efforts to bring about the use of one battery life lamps. I think you will be interested in the attached analysis which Messrs. Prideaux and Egeler have worked up covering the various points involved in going to the one battery life basis. If this were done, we estimate that it would result in increasing our flashlight business approximately 60 percent. We can see no logical reason either from our standpoint or that of the battery manufacturer why such a change

should not be made at this time. Messrs. Parker and Johnson now have this matter up with the battery manufacturers and I would urge that every assistance be given them to put it over. (From Monograph No. 1, 'Economic and Political Aspects of International Cartels,' a study made For the Subcommittee on War Mobilization of the Committee on Military Affairs, United States Senate.)

Further evidence of collaboration between corporations to feather their own nests at the expense of public welfare (and in ways very *unlike* the free competition which they proclaim as the American way and the life of trade) is found in the story of the development of the fluorescent bulb. A fluorescent lighting display was altered at the New York World's Fair in 1940 because the utility companies protested that the display showed the superiority of fluorescent installation for households. The objection was based on the fact that the same output of foot candles with a lower power consumption was possible with the fluorescent bulbs. If, therefore, the public got knowledge of the advantages and there was a wholesale adoption of the new bulbs, the sale of electric power would decline. There would be a saving to the public, of course, but that was not what 'free competitive enterprise' wanted. Therefore, until certain controls and agreements were instituted, the promotion of the new and more efficient bulbs was held back.

In 1938 an executive of the General Electric Co. wrote to five others the following:

I am very very much disturbed over the utility reactions which I am sure we are going to have as soon as we announce the longer, larger and higher wattage fluorescent lamps. With these lamps, it's going to be possible to produce the same or increased foot candles at a very practical installation cost and with a very decided drop in wattage.

Certainly, there should be no publicity of any kind on any further developments on fluorescent until we have had a chance to see where we are going with our present lamps and to formulate a very definite sales, sales promotion, and advertising program, which is definitely pointed at daylight intensities of a high order for stores and factories.

This means greatly increased educational work on the benefits of high intensities at reasonable cost without heat. But unless we have this groundwork much better laid than we have at present, we are going to find the bulk of installations resulting in decreased wattages, and, in the long run, I fear, decreased lamp business.

For an executive of an organization so prominent among corporations which proclaim so glowingly their everlasting interest in the welfare of the public, these are strange statements, are they not? If the use

of fluorescent bulbs would produce a superior light at a reduction in power consumption, would not that benefit the public? Yes, it would. But it would not benefit those who control the production and sale of electric power, and it would 'in the long run . . . decrease the lamp business.' General Electric was being smart in a businesslike way, for it is good business to protect one's profits regardless of the good it does *not* do the public.

Beware of the Greeks Bearing Gifts

There is nothing surprising and nothing deliberately malicious in this and similar businesslike maneuvers; that is the natural and inevitable manner in which business must function. Anything else would not be business. The central and all-vital fact that the thousands at the political convention and the millions back home do not realize is that **WHAT IS GOOD FOR BUSINESS IS NOT GOOD FOR YOU**. This is just the opposite of the businessman's slogan 'What's good for business is good for you' which was spread from coast to coast on billboards and in other advertising media just prior to this war. It is also closer to the facts.

International business, for instance, far from raising the levels of living standards, promoting friendship and reducing war, as claimed by many, actually does the opposite. International business agreements, through the cartels, are more powerful than international treaties and can, in

effect, nullify the best of treaties between nations. 'American' companies, the National Lead Co. and E. I. du Pont de Nemours Co. maintained cartel agreements with German concerns after we were at war with Germany. When confronted with the facts, the companies signed consent decrees to forestall prosecution. These consent decrees were admissions of guilt and a promise that it wouldn't happen again for the duration of this war. 'Dear Uncle, we are very, very sorry,'—sotto voice, 'like Hell'—'and we won't do it any more.'

Asst. Attorney General Tom C. Clark, in charge of the Anti-Trust Division of the Department of Justice, said in 1943: ' . . . cartels had jeopardized the very foundation of our military security by limiting production . . . cartels are not dead . . . failure to eliminate cartel control of the world economy may well lose the peace.'

Senator Bone, Chairman of the U. S. Senate Committee on Patents, declared: 'It would do little good to beat the Nazis if we permit the existence of a vast world-wide cartel system which would enthrone a new type of economic feudalism.' (From Sylvia F. Porter's column in the *New York Post*, 1943.)

Playing Both Sides of the Street

Lest we lose sight of the evidence that brought about such statements, read the following story. Tungsten carbide is of vital importance in cutting tools, extrusion dies and wear-resistant surfaces. Modern war pro-

duction is not possible without it. Tungsten carbide was sold at \$50 per pound in 1927-28 in the United States. Then General Electric and Friedrich Krupp Aktiengesellschaft formed an agreement to pool their patents. Markets and prices were agreed upon and the price in the United States promptly rose to a maximum of \$453 *per pound*. During most of the thirties the price ranged from \$225 to \$453. By 1940 it was still \$205 per pound. In 1942 after an indictment under the anti-trust laws the price dropped to from \$27 to \$47 per pound. Read those price differentials again and check again your concepts of free enterprise.

The effect on our war preparation was even more striking. A director of Krupp wrote in 1936 that Germany was then consuming about 22 times more tungsten carbide per unit of steel produced than the United States was. Obviously Germany was building up her supply of machine tools for war production, while American business' stupidity or cupidity (take your choice) was making it impossible for America to do the same. At the time the price was several hundred dollars per pound, a General Electric engineer wrote that the manufacturing cost of carboloy, (tungsten carbide) was about \$8 per pound. He reported that

the principal reason for these various vendors not selling their tools for machining steel which is such an important item in the machine-shop industry today is that the prices they have to maintain for the carboloy does (sic)

not allow them to put on carboloy enough to stand machining operations on steel. (From 'Economic and Political Aspects of Cartels.')

Regardless of any reasons or lack of reasons behind this restriction, in effect it was outright sabotage of America.

The 'free enterprise' cartels which caused the United States to be without sufficient reserves of tin and rubber are too well known to require elaboration, although they should be listed in a discussion of this kind.

An example of how the finagling of business 'serves' the public is the story of price fixing and adulteration of methyl methacrylate. Methyl methacrylate powders were used by commercial molders and obtained at 85 cents per pound. This same material was used in artificial dentures, but the price to dentists was \$45 per pound. The high price was maintained by means of cartel agreements among E. I. duPont de Nemours & Co., Rohm & Haas Co. (of the United States) and I. G. Farbenindustrie, Rohm & Haas Co. and Imperial Chemical Industries of Germany and Britain.

That the companies concerned had no intention of lowering the price is indicated by the following letter by an executive of Imperial Chemical Industries to a representative of du Pont in February, 1941:

Vinylite resins are now marketed in the U.S. at \$40 per pound, of which the makers (Union Carbide Corporation) get \$8 per pound, or one-fifth. These prices are, of course,

wholly artificial; but nevertheless they are actually realizable and it is clearly of the highest importance to preserve the situation. It is, therefore, essential to us that your company, when it comes to marketing a similar product, avoids the making of any arrangements which might in any way tend to lower the price of Resin M for dental work, or to make it possible for the above-mentioned dental houses to buy the material in the United States for export to this country or dominions.

On March 15, 1940, the Vernon-Benshoff Co. wrote to the American Rohm & Haas Co., proposing the addition of a poisonous ingredient to the material sold to commercial users so that dentists would not buy it at the lower price. The letter said in part: 'There ought to be a trace of something that would make them rear up.' On the following day, Rohm & Haas replied, agreeing to the proposal. Their letter said in part: 'This would be a very fine method of controlling the bootleg situation.'—**(From Economic and Political Aspects of Cartels.)**

Only Saps Work

Obviously, the propaganda big business puts on regarding the need for free competition for the world markets is so much camouflage. Big business has found it much more profitable to make sure that there is NO free competition. Big business

has also found that national patriotism is not profitable and that it should not be allowed to interfere with business.

Those of you who can remember the events of the years between the first world war and this one can very well remember how prettily the people, government, industrialists, politicians and such organizations as the American Legion were going to see to it that in the event America was embroiled in another war there would be no profiteering, no making of 23,000 new millionaires. They may have been correct about the number, at least, this time it may be greater, if corporate profits are any indication. The net income of all active corporations in the U. S. has more than doubled since the war started in 1939. Evidently, war is good for business. But is it, by the same token, good for the rest of us? Ask the boys in the foxholes; and their families who pray for their safe return.

It may be argued that these profits were not made in international trade, cartelized or otherwise. It should not be overlooked that international trade helped prepare for the war by arming our known potential enemies. This made the war bigger and better, and therefore conducive to siphoning off greater profits. Furthermore, some of the handsomest profits are being made by the very companies that helped make our enemies strong.

It should also be noted that those very companies are the ones most likely to come out of the war in the

most favored position, thereby permitting them to go back to their pre-war or an improved style of cartel agreements to restrict production and divide sales to the point of maximum profits and the minimum amount of welfare to the people at large.

In fact it appears that they are not losing any time by waiting. The following is quoted from *United States News*, February 18, 1944:

The fact remains, however, that there is a strong trend all over the world toward cartelization of foreign trade and even domestic production and trade . . . Right now plans are being laid for an international conference to consider the postwar use of cartels. There is a possibility that U. S., British and Russia may form an oil cartel that would control the sale and distribution of petroleum products in world markets in the postwar period. The British had a mission in this country discussing cartels in general. U. S. and Canada have been exploring this field. Representatives of British steel interests have been in this war to make sounding on the postwar prospect for a cartel arrangement in steel.

The Three Big Pigs

There are three basic ways in which cartels can effect their control.

First, there is the association type, an international organization re-

sembling a national trade association which is engaged in restrictive activities. The members of this association are the producing companies in the various nations involved. Through a code of rules and regulations, the cartels of this type fix prices, limit and apportion output, sales and exports, allocate market territories, redistribute profits and sometimes sell through a jointly operated sales agency. To be effective this type of cartel must control a very high percentage of the world's output of the particular commodity dealt in, with, of course, a high degree of willingness to cooperate on the part of the members.

Second, there is the type depending upon control of patents. The patent laws of national governments, including ours, make it reasonably easy for a powerful financial group to obtain and control most of the patents of the world and use them or restrict them in the interests of profit and exploitation and not for the benefit of humanity, as the average inventor would rather have it.

Cartelization is possible by the use of patents also, because patent laws specifically give monopolistic rights to the owners of patents for a number of years. By controlling the patents in a highly technical field of endeavor, a cartel can, then, have a monopoly in effect that is not subject to anti-monopoly laws such as the United States has.

A patent-based agreement is a market-sharing arrangement based upon a deal for exchange of the results of

scientific research. Each member of the agreement grants to the others the privilege of using the processes developed in its own research, both past and future. All new processes are patented in all countries covered by the agreement.

Although the technical knowledge is pooled by these patent-based cartels, markets and territories generally are not. Each concern recognizes specific territories and sometimes certain industrial fields as the private domain of others in the cartel. By such division of territories, it is possible to maintain a high profit level and still make it certain that outsiders do not 'cut in' successfully. The fact that technical discoveries from many laboratories throughout the world are pooled permits the cartel to keep far enough ahead of would-be competitors to keep them out. At the same time, no more advances in technology are made than can be turned to profit. The division of territory by agreement is the safe way to eliminate free competition which would make it impossible to keep an artificially high price level. It should be noted that trade by cartels is the antithesis of *free enterprise, free trade, free competition*.

The third major form of a cartel is the combine. This type goes further in unity than the other two because instead of control by agreement there is control by amalgamation. Several corporations actually combine into one ownership structure. Sometimes two or more great corporations jointly control subsidiaries.

For example, as part of a broader system of intercorporate arrangements, the duPont Company shares with a subsidiary of I. G. Farbenindustrie the ownership of the Bayer-Semesan Co., through which both great corporations carry on all of the business in the United States pertaining to seed disinfectants. In Canada, Canadian Industries, Ltd., is a jointly owned subsidiary of Imperial Chemical Industries and du Pont. There both companies have agreed that in those chemical fields engaged in by both companies, Canadian Industries, Ltd., will be exclusive.

My Company, Right or Wrong!

Similar arrangements are made in South America through a subsidiary called Duperial in cooperation with South American organizations. The more extensive international combines resemble great corporate structures. They may consist of groups of corporations which are bound together by interlockings of stock ownership. For example, the International Telephone & Telegraph Co., and N. V. Phillips each own or control stock in so much of the communications and electrical equipment field that they, with perhaps one or two other concerns, can easily monopolize and cartelize world traffic in such commodities and services.

These three main types of cartels, the international association, the international patent pool agreement, and the international trust, or combine, are the three big pigs of 'free enterprise.'

We need not confine ourselves to statistics and analyses of cartel structure to find evidence that the parties to international cartels place their business deals above their interest in the welfare of America.

The record of the hearings of the Senate Committee on Patents in May 1942 (commonly referred to as the 'Bone Committee') reveals the following dialogue between the Chairman, Senator Homer T. Bone, and Charles D. Pack, Special Attorney of the Anti-Trust Division of the Department of Justice, and Mr. Creekmore Fath, counsel of the Committee:

Mr. Pack: There is one final document on South America which I consider one of the most important or significant documents that has or will be introduced here. The full extent of cooperation with the Cartel in South America is singularly evidenced by an excerpt from the semi-annual Report of Foreign Relations Department of du Pont, dated February 9, 1940, in a paragraph relating to I. G. Farbenindustrie, where it is stated:

'I. G. (Germany) has given evidence of the adoption of a policy of industrial development in South America through purchase of the Fluminense caustic chlorine plant in Brazil and of shares of the Electro-color plant in Brazil and of shares of the Electro-color Co. in Argentina. Arrangements have been made for the repayment to the I. G. of money advanced to Duperial

for the purchase of shares in the latter company as it is impracticable for I.C.I. (Imperial Chemical Industry, Great Britain) to be in partnership relationship with a German company. The du Pont Co. informed I. G. that they intended *to use their good offices after the war to have the I. G. participation restored.*'

The inference which may be drawn from this last sentence requires no additional comment.

Mr. Fath: This was in February of 1940. That means that it was after the British blockade had been set up between German and South American markets?

Mr. Pack: Yes; that was approximately 5 or 6 months after the war had begun.

The Chairman: That was about the time of Dunkirk?

Mr. Pack: Just a little before Dunkirk.

The Chairman: So, the bombs were falling on England at that time, and British boys were dying on European battlefields, while these gentlemen were making this very pleasant arrangement among themselves.

Mr. Pack: Correct.

The Chairman: Looking forward to the time when the German crowd and the British crowd could resume their pleasant relations?

Mr. Pack: That is right. In other words, this was merely a temporary arrangement. It was not practicable for I.C.I. and

I.G. to be in partnership relation during the war, but the parties were already looking forward to a resumption after the war of the very pleasant relationship which theretofore had existed.

Mr. Fath: Duperial in South America was a subsidiary corporation of I.C.I. and du Pont?

Mr. Pack: That is right; it was jointly owned by those companies.

Mr. Fath: So, we have a subsidiary corporation of Imperial Chemical Industries making repayment to I.G. Farben for something that Imperial Chemical did not want to be caught with?

Mr. Pack: That is right.

Mr. Fath: Here we have du Pont acting as intermediary and informing I. G. Farben that it will use its good offices after the war to have the German participation restored?

Mr. Pack: That is the apparent import of this letter.

Mr. Fath: So, du Pont was more or less acting as a go-between for or a fixer between Imperial Chemical Industries and I. G. Farbenindustrie?

Mr. Pack: Yes; I think that is a correct inference.

The Chairman: Well, it is a little story that is worth enshrining in the pages of history.

Mr. Pack: I think there will be other interesting developments as we continue.

The Chairman: The interest-

ing part of this thing is the fact that these gentlemen were so eager to arrange their business relations so that they would not get hurt, even though we may have 5,000,000 American boys killed. There will be no suits in any court by the mothers and fathers of American boys as the result of the destruction of their sons; but these gentlemen, who are flag wavers and breast beaters, will by means of their control be able very pleasantly to adjust their business relations and their property relationships after this bloody business is over. That is precisely the purpose of this kind of arrangement, or whatever they want to call it. I would like to have them come down here and tell not this committee but the American people precisely what they mean by this sort of business. The record, of course, speaks for itself; but after an army of our own boys has been butchered, these gentlemen will get their feet together under the table to reestablish their pleasant business relations. This sort of history will be more interesting. There will be plenty of people in this country who will refresh their minds from this record.

Mr. Fath: It seems that some people can do business with Hitler and that some can't. It seems that these people could.

Mr. Pack: And the Japanese, too, you recall.

The Chairman: Well, I do not know the purpose of telling the American people that they can't do business with Hitler when we have had page after page of illustrations of how gentlemen are not only doing business and have been doing business with Hitler, but are coldly arranging to renew business with the Hitler regime if it can survive this war. Everybody in this country is hoping that it will be blotted out of existence but these gentlemen do not contemplate anything but a suspension of relations. They are looking forward, with cold and ruthless purpose, to reestablishing pleasant business relation with German firms when this miserable business is over; and all you will get out of them is a squawk of protest because these facts are being made known to the American people. Out with such business.

Such is the nature of business and of business men. Such are the hands that so many gullible and uninformed Americans expect to put their fate into after the war. Business cries: 'What is good for business is good for you,' and the sucker public believes it. Unless cartels are completely eradicated, the pied piper of international trade will again lead Americans to their doom in another military struggle of disaster.

Technology has for years pointed out the disastrous effects of international trade. Now Technocracy is not alone, for others are surely, though slowly, finding out the nature of prof-

itable international trade in this age of power production. There is no business profit in abundance, and, since the threat of abundance is ever present now, restriction and allocation of production is inevitably the order. The cartel is the symbol of international trade today, and an accurate one.

Buy Low and Sell High

'Business is business,' we have often heard people say. That is so; 'business is business' and that is precisely why it is the most socially dangerous function in North America today. Contrary to what business tells you, what is good for business is *not* good for you. This is so because success in business in the power age directly implies an operation in a service or commodity which must be kept scarce enough to bring a price sufficient for a profit over the cost of making that service or commodity available to the purchaser. There is nothing ethically or morally or historically 'wrong' in that process. Business is business, and the cartel is one of the most advanced forms of business. Hence it would be futile to list the damaging aspects of cartels without pointing out that they are the natural and inevitable product of business methods and cannot be affected basically by any process which does not affect business basically.

A pecuniary margin over cost, which is profit, is necessary for the function of business. Only a few decades ago when the impact of the

inventor and technologist had not yet been felt, scarcity was the natural order. Therefore, because there was never enough of any physical thing, from land to hairpins, for every individual to have all he could use for the reaching out for them, a system of price evaluation and a system of exchange based on price was natural. The fact that the medium of exchange became small-sized, easily transportable units called currency was very natural, too, as a measure of convenience.

The early days of our nation were also the early days of the industrial revolution. The effect of the industrial revolution has been profound the world over, but nowhere so much as in North America where nature provided such an abundance of raw materials and sources of inanimate energy. With the application of energy to the many machines developed by the inventors, a word almost without meaning until recent decades became very, very meaningful. That word was 'surplus.'

We also had more and more frequent and greater and greater examples of something called 'depression.' It was commonly said that depressions were caused by the fact that we had produced so much by the new productive methods that there was not sufficient 'demand' to match the supply. It was not actually a problem of supply and demand but of supply and restricted purchasing power.

If a relative abundance of any product was created, the price would drop to a level at which it could not

be sold for a profit. Therefore, production would be cut by those who controlled the manufacturing establishments until the supply became scarce enough to bring the price again above the cost mark. The fact that mass production constantly lowered the cost is not pertinent to the main function, for regardless of the absolute sale price the cost price had to be less, or there would have been no profit, and with no profit there would have been no business.

Now back to the cartel. Transportation facilities made possible worldwide trade and exploitation. Selling home products to undeveloped lands was a lucrative occupation for the more industrially advanced nations. But then again the problem of 'surplus' and profit came into the picture. So much production was possible and in so many different places that the markets of the world became insufficient for all. All would face likely ruin unless a way were found to do one of two things: (1) increase the purchasing power of the world, or (2) restrict the output to a volume which can be sold at a profit.

Since there can be no general overall profits over losses except in an expanding economy, i.e., expansion of populations or industries, and since such expansion has largely ceased, artificial controls must be established to skim off enough profits to hold up the basic structure of world business, and business in the most productive countries as well.

Consolidate The Rackets

Internally these countries faced business impasses. Competitive international trade was not profitable. The only solution in the business pattern was international trade on a restricted, carefully controlled basis. That these restrictions kept abundance, good health and peace from the world was not a consideration of business, for business is business. The cartel, of which the destructive and harmful effects have been mentioned earlier in this article, is the mechanism for this restricting, hamstringing control.

North America has the greatest opportunity of all areas in the world to get away from the cartel. This is so because world trade for North America, regardless of the type of financial accompaniment, can never do anything except lower the standard of living of its 190,000,000 people. In turn, this is so, because the area with the lion's share of world resources and the most fortuitous arrangement of geography, geology and climate, can produce a higher level of abundance by an efficient organization of its own house than by dissipating its resources in world trade, cartelized or not.

The solution to our cartel woes, then, is to be found not in moraliz-

ing, wailing, or making treaties, but by accomplishing a basic change in business itself, even to its elimination. The flies in the ointment of American abundance and peace are not the perpetrators of cartels, per se, but those who through ignorance or malice keep America doped by such erroneous slogans as 'What is good for business is good for you.'

The great war against fascism is reaching its victorious final stages. The military adjuncts of the fascists of the world are crumbling. But the fascist mode of operation, which is the consolidation of all minor rackets into major monopolies—of which the cartel is one form—with an accompanying attempt to prevent the threatening abundance which would forever extinguish the fascist power, is part of the structure of business itself.

There will very soon come a day in America when the public will be forced to choose, and choose quickly, between the poverty, slavery and death of a fascist mode of operation in America, with its cartels and other restrictions endemic to business in a power age, and the abundance, health and peace of a society basing its production of needs and luxuries on the principles of science.

Investigate Technocracy!

'The philosophy of scarcity which is inherent in monopoly can have only one result in the long run—impoverishment of the nation. For full and unlimited production is the only means of increasing real wealth. Indeed international monopoly

power was directly responsible for the scarcities which have caused us so much difficulty with regard to rubber, tin, steel, copper, and aluminum.'—Congressman from California, Jerry Voorhis, in *The Progressive*, August 7, 1944.

Where's the Power Going?

Ask 'Mom'—She Knows

by Robert Bruce

'I'd Unravel Every Riddle'

Sale of electricity for domestic use in 1943 in the U. S. amounted to 28,800,000,000 kilowatt hours. Only 2,000,000 new domestic consumers were listed for the year, and hardly any new appliances were sold. Yet consumption rose 1,800,000,000 kilowatts over that of 1942. How come?

Census statistics reveal there has been an increase in population in many metropolitan areas since the war began. Construction of new dwellings has not kept pace with this population movement. Occupancy rates in the apartments of most cities are near the hundred percent mark. So, this rise in power consumption may reflect, in part, the increased population in urban centers and a greater number of dwellers per housing unit. Since very few new appliances were added in 1943, the effect has been to operate those in use at a higher load factor.

Electrical 'experts' have advanced several interesting theories to account for the rise in power consumption. Among these are: greater use of electrical heaters because of the shortages in coal and oil; more people burning lights at night at home instead of on the highway because of gasoline rationing; discarded appliances have been repaired and the second-hand stores of the nation

stripped of usable appliances, thus adding to the total number of appliances; more people doing their own laundry at home; more people listening to the war news; swingshifters coming in and going out at funny hours and turning on lights; junior experimenting in the basement with 'secret weapons' to win the war and burning lights to do it, etc., etc., etc.

However, there is one theory which the 'experts' have overlooked. How about the housemaid shortage? How many times may it have happened before the war that when Minnie the Maid was supposed to be vacuuming the carpets, while 'Mom' was out to a Club meeting in the afternoon, Minnie was actually entertaining the boy friend in the kitchen. Now that Minnie is working in a war plant, 'Mom' has to vacuum her own carpets. Since we all know what a determined specimen the average 'Mom' is we can reasonably assume that when she gets on the business end of an electric iron or vacuum cleaner, she gives it all she's got. Ergo, the power curve rises, the electrical 'experts' scratch their heads, and the utility bondholders glow with satisfaction. That's America for you.

'An executive is a man who always decides quickly, and is sometimes right.'—Julius Rosenwald.

Mayas and Aztecs Were Only American Indians to Develop a System of Writing

By Paul S. Martin

Chief Curator, Department of Anthropology, Chicago Natural History Museum (Formerly Field Museum). *Condensed from the Museum Bulletin, July-August 1944 issue, by Permission.*

According to the latest archaeological evidence, evidence recently recovered from beneath the dry lake bed of a Pleistocene lake in Arizona, the American Indian has been in the New World at least 15,000 years and perhaps as long as 25,000. He undoubtedly came from Asia via Bering Strait.

The earliest date *recorded* by man in the New World, about A.D. 350, comes from Uaxuctun, Guatemala. What man did in the New World during the thousands of years before this date is not known. At some time during this period he began to develop a system of agriculture, which finally made it possible for him to domesticate at least 30 different food plants, *many of which are in daily use on our tables.*

During the millenia that man has been in the New World, he has invented only one system of writing, and that was in Central America. This system was used by two peoples, the Mayas and the Aztecs. The Mayas developed and extended it more than did the Aztecs.

Who were (and are) the Mayas,

and of what did their ancient civilization consist?

Highly Developed Culture

At least twenty-five hundred years ago they had become agriculturists, raising beans, squash, peppers, tobacco and maize (corn). They did not possess the plough nor any domesticated beast of burden.

Large towns and then great cities sprang into existence. Each city was provided with at least one civic center and the principal structures were built around it.

The achievements of the Mayas stand head and shoulders in every direction above those of all other American Indian peoples. A renaissance of Maya culture flowered in Yucatan for six centuries and was *then stamped out by the Spaniards in 1541.*

The Maya system of writing consists of phonetic and ideographic symbols. We do not know how and where they developed. It is certain that they are indigenous and *show no trace of any Old World influence.*

At the present time about one-third of all Maya glyphs (symbols) can be read. These deciphered glyphs include signs for:

The day and the month,

Two kinds of numbers, from zero to infinity,

Signs for periods of time,

The four directions (of the compass),

The several 'gods' and,

The sun, moon, Venus, Mars and Jupiter.

Where do Maya inscriptions occur? They are found on large stone monuments, in bas-reliefs of molded stucco, on bone, shell, metal and pottery, and in three codices inscribed in color on fibre-paper. *The Mayas possessed many more books, but the Spanish priests burned thousands of them and therefore only three remain.*








Obsessed by Time's Flight

What do Maya inscriptions say? Since only one-third of all Maya glyphs have been read, it is impossible to know the total content of the inscriptions. They are, first, concerned with the counting of time.

Interest in the passage of time was almost a fanatical passion of the Mayas, and time was noted with meticulous care.

Second, the inscriptions recorded *and predicted* astronomical phenomena such as revolutions of the planets, eclipses and celestial conjunctions. The Maya astronomers possessed lunar and Venus tables. The lunar tables predicted such things as the appearance of the new moon and eclipses of the moon. The Venus tables forecast the movements of the planet Venus, and *were so accurate that the accumulated error in a thousand years would not have amounted to more than a year.*

Since the glyphs which can be read all deal with numbers, astronomy, and time, I am, perforce, obliged to describe now very briefly some of the mathematical accomplishments of the Maya Indians.

MAYA NUMERALS						
						
ZERO	ONE	TWO	FIVE	EIGHT	TEN	NINETEEN
COMPARISON OF SYSTEMS OF WRITING NUMBERS						
OUR SYSTEM	Number to be Written	3rd position Units of 100	2nd position Units of 10	1st position Units of 1	Result	
(DECIMAL)	405	4 4 × 100 +	0 0 × 10 +	5 5 × 1 =	405	
MAYA SYSTEM	Number to be Written	3rd position Units of 400	2nd position Units of 20	1st position Units of 1	Result	
(VIGESIMAL)	405	• 1 × 400 +	• 0 × 20 +	1 5 × 1 =	405	

Invention Of The Zero Concept

Sometime before the beginning of the Christian era (perhaps 200 B.C.) the Mayas devised the principle of notation by position, a system which was adequate for handling their mathematical data. This system, plus the invention and use of a mathematical concept of zero, was a brilliant achievement. Moreover, the Maya Indians used their symbol for zero exactly as we do. *The Egyptians, Greeks and Romans did not possess this useful concept*, it was employed in the Old World (in India) some centuries after it had been in use by the Mayas. The Maya system of numeration had vast advantages of flexibility and speed over any of the contemporaneous methods of numerical notation used in the Old World. They handled uneven quantities with surprising accuracy. For example, using the formula 81 moons equals 2,392 days, they computed the length of the lunar period as 29.53086 days.

Elaborate Mayan Calendars

By the year A.D. 350 (the date of the earliest inscription), the Maya priests knew that the year was actually about six hours longer than 365 days. Since they did not have an elastic month like our February, they could not add a day here and there without throwing off the whole elaborately interlocked system of days, months and years. However, in all inscriptions, the priests (Mayan) always made the necessary calculations

to show how many days the recorded official year was ahead of the true year. By their formulae they computed the length of the solar year as 365.2429 days, which was as accurate as our Gregorian correction (365.2425) *and was developed at least a thousand years earlier.*

How long it took to gather enough astronomical observations for computing these figures is anybody's guess. Which came first, the astronomical observations or the system of writing and notation? Or did they grow up together? It must be clear that several centuries would be required for accomplishing these jobs and that the Maya system of writing must date back at least to the beginning of our era.

It seems clear that the Mayas and Aztecs both received their writing and their calendar from a common source, or possibly they may even have been developed by the Mayas themselves; they represent one of the earliest stages of formal writing system which has come down to us. This does not mean that the Maya-Aztec systems of writing are the oldest in the world, for this claim would be untrue. But the Maya-Aztec writing *does* represent an early stage in the development of written language. (Italics and supplemental wording in brackets ours.)

Editor's Note: The announced article on Central American and Caribbean resources and technology has been put off until better data are available.

That's The Price System For You!

Keep Both Hands In Your Pockets, Boys!

by R. F. Novalis

Rules of the Game

In all the years since 1926, when 'receivership proceedings' of the Chicago Surface (streetcar) Lines began, a total of \$4,102,000 has been spent by the company plus \$7,300,000 by the City of Chicago on lawyers' fees, reorganization costs, court costs, receivers, special masters, experts, etc., etc. For this grand total of \$11,402,000 just 760 modern streetcars could have been purchased (of the \$15,000 type of which 85 were bought about ten years ago for the Madison Street line) and have \$2,000 left over for small change for the conductors. Aside from these 85 new cars, the rest of the equipment is 'more fitting to 1915 than to the present,' according to an engineering report at one of the hearings. (Data from *Chicago Sun*, Sept. 11, 1944.)

'For misbranding and adulteration of a drug product which government prosecutors charged has caused 107 deaths, the Akerite Chemical Company of Chicago was fined \$3,004 yesterday by Federal Judge William J. Campbell. *The company entered a plea of guilty.* . . . The drug was known as Akerite Glycerine Substitutes.' (*Chicago Sun*, December 31, 1943.) Ed. note—The Price System's inhumanity is so outright that words

fail us. Let's put it on a cold cash basis, and see what 107 into \$3,004 amounts to. It's exactly \$28.07 per corpse. Maybe they threw in a decent burial with the deal, \$28.07 won't do it.

Typical of manpower waste in war plants is the following, from the Materiel Division of Douglas Aircraft Company: 'Government reports alone take 30,000 man-hours a month. Total paper work runs over 1,000,000 separate forms and reports every thirty days.' Ed. note—This is a sample of the Price System's vaunted 'efficiency' which helps rather to slow down production and thus maintain scarcity.

'The Sensmeier Tract, the last known stand of virgin timber in Illinois, is now just another stump and brush area. *Commercial operators* started cutting operations in this fine old stand of timber during May, and a large number of the forest giants of this area now lie prostrate. Efforts on the part of interested parties (Illinois Fed. of Women's Clubs, which was unable to put up *the money* to buy the land and protect it) failed because of complications involved in settling *the estate.*' From Illinois Dept. of Conservation's July, 1944 *Forestry News*. Ed. note—Parenthesized insert ours. The Price System interferences are italicized by us.

'A secret war weapon of great life-saving potentialities is seriously behind schedule because of labor shortage. U. S. Employment Service is advertising for workers in surplus areas, but in one large city *all the newspapers have combined to refuse the advertisements*; in another, the *Chamber of Commerce* runs simultaneous advertisements, asking workers not to leave. . . . These actions were taken even when the importance of the war work was known to the newspapers and the Chamber of Commerce. Motivations were the *holding of voters* in a particular area, and fear of *loss of purchasing power*.' We are indebted to *Iron Age Magazine* June 15, 1944, a staunch upholder of the Price System, for this isolated sample of the crying need for Total Conscription. The italics of last sentence quoted are from the magazine; others ours.

Just Try To Be Healthy

A headline in the *Chicago Tribune*, August 13, 1944, read like this:

**TONS OF OHIO TOMATOES
ROT; 'PRICE TOO LOW'**

'Nashville, Tenn., May 9, 1944. In the past *week* 1,114 new cases of communicable diseases were reported to the State Dept. of Public Health, including one case of typhus . . . and the following *new* cases: Syphilis 293; gonorrhea 199; measles 196; tuberculosis 26; meningitis 10; pneumonia 56. . . .' From Memphis, Tenn., *Commercial Appeal*, May 10, 1944. Then—

'An increase of nearly 8 percent in the death rate for the first quarter of

1944 over the corresponding period of 1943 is reported. . . . Provisional data for the general population of the U.S.A. show a similar picture. . . . Tuberculosis, measles, scarlet fever, diphtheria, and diarrhea and enteritis of children have all shown increased death rates during 1944. Meningitis death rate . . . was about 60 percent higher than in 1943 . . . accidents increased 12.3 percent. . . .' From *Science Newsletter*, May 20, 1944. What are some of the causes? Chief among them is neglect, the result of the interference of price in the distribution and usage of health care personnel and facilities, such as—

'Galva, Ill., March 13 — The 100 percent absence of physicians in this *community* of 3,500 was relieved today by the arrival from Peoria of Dr. Ruth E. Dunham of the U. S. Public Health Service.' From *Chicago Herald-American*, March 13, 1944. Ed. note—The U. S. Government, which does not charge a price for medical services, had to step in.

'There are more than 1,500 counties in the country *without a doctor today*.' From *The Index*, New York Trust Co. bulletin, summer, 1944, issue. Ed. note—There are 3,700 counties in U. S.

'The greatest concentration of physicians in the U. S. A. is on Park Avenue in New York City. Along the 4 miles of this fashionable thoroughfare are the offices of nearly 800 doctors, or a larger number than are normally registered in . . . eleven States.' From 'Strange but True' column of *True Magazine*, July, 1944.

Ed. note—*True* magazine's correspondent is away off the beam in his figures. The greatest concentration of doctors of all types is in Chicago's Loop. The Chicago telephone directory lists over 1,000 Allopaths, 61 Osteopaths, 22 Chiropractors, 12 Naprapaths, 5 Naturopaths, 9 Physical Therapists, 19 Physical Culture Institutes, and more than 130 faith healers in an area 8 blocks long and 7 blocks wide.

The point of all this is that Price System methods of operation force doctors of all types to concentrate where the most purchasing power is. Whether this is the place of greatest need for doctors or not is completely irrelevant. The general welfare of the people, of which public health is an important part, is an insignificant and accidental by-product of the sacred right of 'free enterprise' to pursue profits. That's the Price System for you.

One Loose Nut

'Mr. H. W. Luce, the editor of *Time* and *Fortune*, is reported to have said: "And now if science will kindly get out of the driver's seat and under the hood where it belongs, Man will take over—Man as Man."' The fact of the matter is, science has not yet been in the driver's seat at all. If the scientific method of squarely facing facts and of . . . impartially drawing conclusions were applied in ordinary affairs, this world would be a very different place.

'We speak about living in a scientific age, but actually the scientific method has scarcely scratched the

surface of our everyday life. Science provides man with the wonders of radio, and he uses it every hour of the day to broadcast misleading and sometimes lying advertisements for the private gain of a few individuals. It is true science has helped to lessen superstition, and yet a recent writer tells of seeing in one New York railway station seven different magazines on astrology, one of them with a circulation of 132,000. Science helps man grow two blades (of grain) instead of one, and yet only a few years ago, while part of the world was starving, man slaughtered millions of pigs and ploughed under thousands of acres of farm produce. It is not claimed that the scientist is a *deus ex machina* . . . his conclusions may frequently be wrong but, if consistently and persistently he faces all questions in the light of the scientific method, and if he can persuade others to do the same, it will result in fewer social evils than in a regime in which headlines are given to the opinions of wealthy financiers or Hollywood stars on matters about which they know little or nothing.'—Prof. J. K. Robertson, Vice President of the Royal Society of Canada and head of Physics Dept., Queen's University, in his booklet '*Canada's Future in Test Tubes?*' 1944.

When Johnny Comes Marching Home

'Kids here at home grow up surrounded by barriers—all man-made. State barriers, city barriers, racial barriers, political barriers, barriers of wealth. You climb over one barrier only to find another ahead of you.

'Then you find yourself at the front, thousands of miles from home. And suddenly, perhaps for the first time in your life, you realize that here . . . is an outpost of America where there are no barriers. This was always the dream that never before had quite come true. This was the America they told you about when you were a school kid studying history. There are no democrats or republicans at the front; there are no Italian-Americans, or Polish-Americans; there are no Jews, Catholics, or Protestants at the front; there are no New Yorkers or Californians or Texans or New Englanders—only Americans—that's all; *only Americans purged of the artificial barriers we still make so much of at home.*

'Our boys, our sons, are living in the wonder of this new America they are discovering day by day. . . . I saw them sometimes look puzzled as though they were thinking of the absurd prejudices they had grown up with, and, not knowing any better, had accepted.

'When these boys come home, they'll expect to find the kind of America that they discovered at the front—an America *without* artificial man-made barriers, the kind of America our forefathers intended should be our heritage.' Quentin Reynolds, war correspondent for *Colliers' Magazine*.

'Men who have learned the intricacies of radar will not be satisfied peddling magazine subscriptions. Men who have flown bombers will not be happy untangling red tape.

Men who have learned to build and use the lightning calculators used in anti-aircraft fire will not accept with grace a job pushing buttons on an electric elevator. The end of the war may be near or far away. The world that follows the war will be what we choose to make it, beginning now.' Dr. Thomas Parran, Surgeon-General, U. S. Public Health Service, quoted in *Chicago Times*, August 12, 1944.

A Bill of Divorcement

'Lasting peace through science,' was envisioned by Walter J. Murphy, editor of *Industrial & Engineering Chemistry*, in an address recently delivered before the University of Michigan Section of the American Chemical Society.

'Scientists and technologists must . . . end "the unholy wedlock of science and the base instincts of man, a tragic and unhappy union from which has stemmed most of the misery of mankind," Mr. Murphy declared. 'For hundreds of years Napoleons and Hitlers have seized upon the works of the technologists in the hope of conquering their fellowman and subjecting him to abject slavery. Scientists have failed to control the fruits of their discoveries. . . .' *Scientific American*, August, 1944.

'Technical competence has become the dominating factor in human progress.

'We may discourage, but we cannot stop such change; discovery and invention cannot be bottled up. Technological developments resulting therefrom are as inevitable as the advent of another day. And such

change, rather than our wishes, desires, or ambitions, will determine . . . how we shall live—in short, the world of tomorrow.

'For better or for worse we are in the grip of this new revelation we call technology; it has lifted us in the past from manlike apes eking out a precarious and uncertain existence in the jungle, to a world in which we exercise a remarkable control over our environment and have opportunities for making almost as much as we will of this great adventure called life.

'Yet technological development has been the vital force of human progress. It not only determines the world in which we live but also conditions our thinking and our outlook . . . and our hopes for the future. The wisest of men would do well not to attempt arbitrarily to divert or obstruct the flow and operation of technological change.' J. K. Finch, associate dean, School of Engineering,

Columbia University, October 21, 1943, in his annual report to the University.

Editor's Conclusion: Here we have given a partial picture of the Price System methods of operation. As noted these are examples taken from the public press. We could extend this type of thing and fill up the magazine with it. There are literally thousands of examples at hand, all around us, to illustrate the futility and chaos toward which America is heading. Never before in human history has a nation insisted on proceeding headlong in the opposite direction from which all the physical signs are pointing, on such a grand scale of futility, as America is now doing. Some of these days we will come to an abrupt halt and be forced by physical conditions to execute an about-face. Let's hope we've got native brains enough left at that time to do the correct thing.

Elementary, Doctor Watson!

According to an item which appeared in *Time* on November 8, 1943 the Department of The Interior has been engaged in the greatest treasure hunt the world has ever witnessed. The department discovered millions of tons of war-critical ore. The account stated that the WPB has scratched aluminum and zinc off the list of U. S. shortages and that copper may soon follow suit. The Government now knows of huge deposits of manganese, nickel and mercury, vanadium, tantalum, chromites, baux-

ite, magnesium and tungsten. The treasure hunt was said to have been the 'quietest' and best organized in history.

This is great news for America. Now if some Department or other will only make a 'super-quiet' investigation of the quiet conspiracy of the International Tin Committee to deny or prove the alleged existence of huge deposits of tin at Juniper Ridge in Harney County, Oregon near Burns we could all relax with quiet satisfaction.

WILL YOU TRADE \$1.00 FOR \$3.75?

We have some back issues for sale at this reduction in price.

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From the Camera's Eyevew

War, What For?

Shouting The Battle Cry of Freedom

THE causes of war are manifold. They have been traced to personal quarrels for the possession of a throne, or a woman. There have been revolutionary wars for the independence of one country from another. Among other causes are political, economic, religious, racial and social factors. Tersely expressed, wars have been waged for 'God, Greed and Gold.'

The War of the Roses in England (1455-1485) is an example of a war for the possession of a throne. The legendary Trojan War (circa 1194-1184 B.C.) is poetically reputed to have been waged over a woman. The American Revolutionary War (1775-1783) and the Greek-Turkish war (1821-1828) are two examples of wars waged for independence. The Franco-Prussian War (1870-1871) was preceded and precipitated by much political bickering between Napoleon III and Bismarck. The war for the rich gold mines of South Africa, called the Boer War (1899-1902) was an out and out economic war. The Biblical Wars of the Israelites (The Chosen People) and the Boxer Rebellion of 1900 in China were racial wars. Finally, the war of defense waged by Russia against the assaults of the western democracies, immediately following the First World War, is a case in point where social factors predominated.

Warfare has often been distinguished by codes of ethical conduct on the battlefield, and toward a defeated enemy. For instance, the terms by which the Boer War was concluded were very magnanimous. The United Nations today are observing the terms of the Geneva Convention. The American Civil War was concluded on generous terms to the Southern States. So, although war in itself is hell, men have throughout the ages tried to save their conscience and save their face by surrounding it with gentlemanly agreements and knightly codes.

Am I My Brother's Keeper?

Not so with religious wars. Organized murder carried out in the name of Jesus Christ has always been characterized by the utmost savagery and cruelty. Europe has been laid waste prior to World War II by religious wars. The part played by reactionary ecclesiasticism in this war yet remains to be proclaimed by history.

The first period of religious wars in Europe occurred between 1559 and 1598. These wars were caused by the hostility of the established ecclesiastical, political and economic institutions toward the Reformation then spreading over Europe. Protestant Holland was ravaged by Catholic Spain. Philip II, King of Spain, wrote the Pope that 'he would lose the provinces (The Netherlands) or would maintain their Catholic religion.' The struggle lasted 37 years. Eventually The Netherlands won their independence.

France was split into warring factions over the Reformation. Internecine strife went on for years and culminated in the Massacre of St. Bartholomew's Eve August 24, 1572. Thirty thousand Protestants were slaughtered. When the news reached Rome, the Pope ordered a jubilee and a procession to the Church of St. Louis and caused the Te Deum to be chanted. This struggle ended with the Edict of Nantes by which King Henry IV of France granted toleration to his protestant subjects.

Spain then attempted to re-catholicize England. Philip II outfitted the Invincible Armada and set sail in 1588. Two violent storms, plus the British Navy, decimated his fleet and only a feeble remnant got back to Spain. This put the quietus on any further attempts of that nature.

The second time Europe was gutted by religious warfare was during the Thirty Years War (1618-1648). The forces of social reversion were still determined to stamp out the Reformation. It started as a war between Bohemia and Austria. Soon every country in Europe was involved. The Thirty Years War exceeded in savagery the invasion of Attila the Hun. Europe reverted to barbarism, See p. 35



Official Photo U. S. Air Forces

Invasion by land, sea and air. American gliders towed by C-47's of the 9th AF Troop Carrier Command are seen here over the coast of France. The gliders are loaded with U.S. infantrymen. Aviation technology is advancing rapidly. Perhaps we'll even have giant Flying Wings soon after this war is over. One Flying Wing can haul 300 soldiers; 50 tons of bombs; or two 25-ton tanks.



Official Photo U. S. Air Forces

'But still he left behind his trail, and thereby hangs my little tale.' Here an enemy ammunition train is going up in smoke from a direct hit by B-25 Mitchells of the 12th Air Force. The scene is at Orvieto, Italy, on the main line from Rome to Florence. It looks like a Fourth of July fireworks' display in reverse. But there's nothing to celebrate on the receiving end.

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See p. 35

OCRAT



Signal Corps Photo

U. S. Army Engineers bridging a fast flowing river in New Guinea. It is a difficult and hazardous job. Here, the breakwater form, completed and attached to steel cables, is being put in alignment by Caterpillar tractors on the shore. After reaching position it is filled with concrete to form the main support of a permanent wood and concrete bridge. What would they do without the engineers?



Signal Corps Photo

Here is a hot way to put a Jap pillbox out of action. Infantrymen pause while the flamethrower does his stuff. Man's most ancient servant and enemy, Fire, has been used in warfare for thousands of years. The army's newest flamethrower will hurl a geyser of fire 450 feet. The flame can be made to ricochet and thus turn corners. This scene is on the island of Saipan.



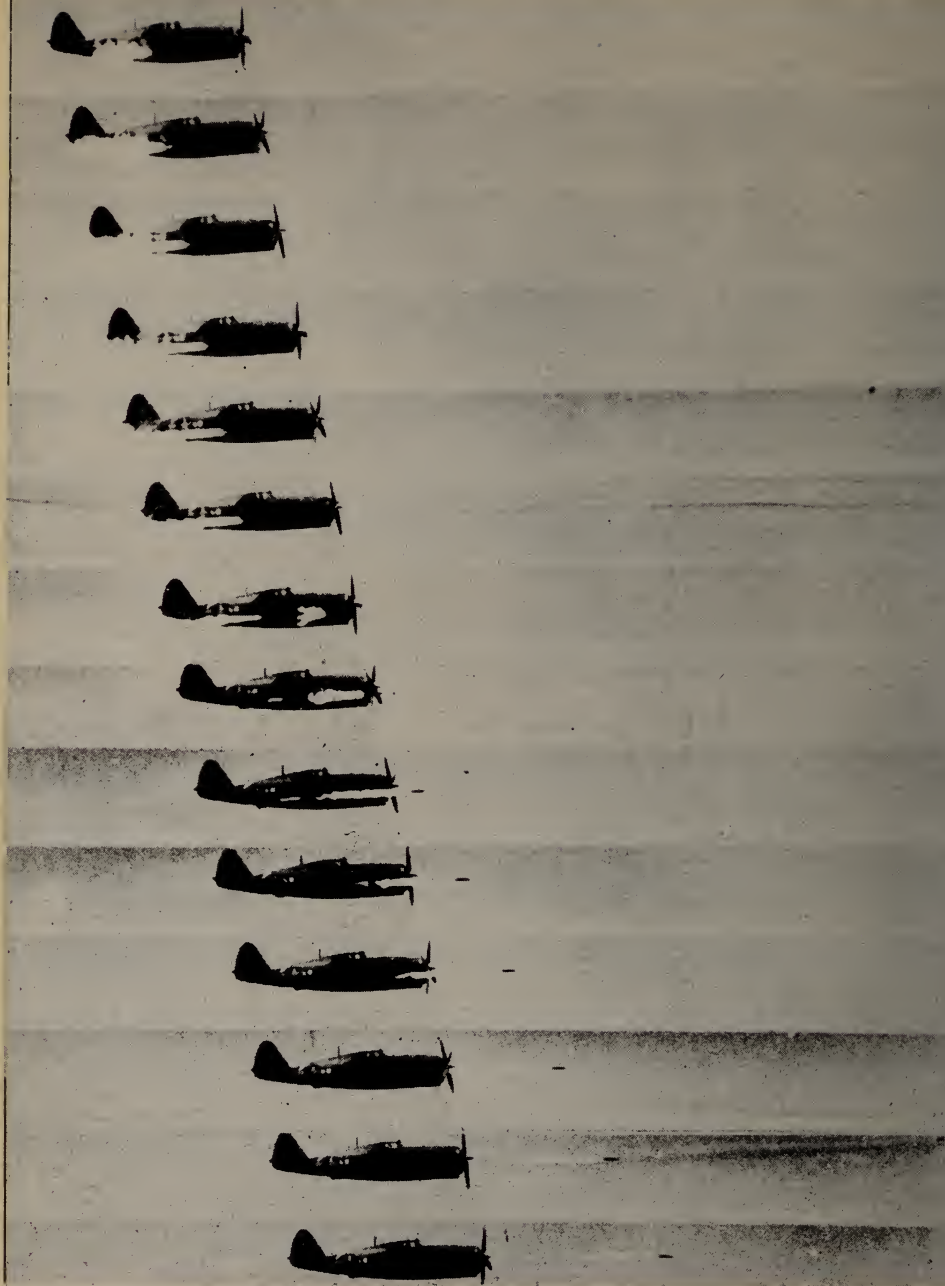
Signal Corps Photo

Saipan was bought at a cost of more than 3000 American casualties. But the Japs paid off in heavy odds. Here two American soldiers are probing the ruins of a demolished Jap sugar refinery, blasted apart by aerial bombs and naval gunfire. Notice the narrow gauge railroad. It's symptomatic of the narrow gauge technology of Japan as compared to the wide gauge technology of America, so to speak.



Signal Corps Photo

The Army Service Forces Transportation Corps is now operating the Iranian railroad in Persia. Trainloads of American made war materiel move through the ancient deserts and mountains to northern supply depots. It's a part of Lend-Lease to Russia. American technology is capable of flooding the world with war goods. It has done it. If it can provide abundance in war, it can do it in peace.



Official Photo U. S. Air Forces

The Bazooka has taken to the air. Superspeed photographs of a P-47 Thunderbolt firing a rocket shell. The explosive used is pentolite, 20 percent stronger than T.N.T. A rocket shell increases in velocity after firing, has no recoil and its trajectory is flat. P-47 has six rocket guns and eight 50 calibre machine guns. The rocket assembly is simple and light in weight.



Signal Corps Photo

This low slung personnel and supply carrier called the Weasel, M-29, is capable of operating over a greater variety of terrain conditions than any other Army vehicle. Chief reason for this ability is light weight combined with extra broad tracks. Pressure exerted on the ground is about one fourth that of a fully equipped infantryman. The Weasel gets through where the Jeep can't go.



+51689 AQ

Official Photo U. S. Air Forces
USAAF aviation engineers, building B-29 bases in China with native labor. Men, mules, carts, wheelbarrows, shoulder baskets, toil and sweat. That's the Chinese way of building a landing field. 10,000 human laborers can do only as much work as TEN 100 hp engines operating modern earth-moving equipment. The rate of energy conversion in China is extremely low. In America it's very high.



Photo: Courtesy Caterpillar Tractor Co.

Here's the American way of constructing a landing field. The engines shown here probably have more power than the entire army of men shown in the previous picture. On this field at Johnstown, Pennsylvania, Caterpillar Diesel D8 Tractors with LaPlant-Choate scrapers moved 1,000,000 yards of earth one-half mile. They worked 23 hours a day and each tractor used $5\frac{1}{2}$ gallons of 7c fuel per hour.



Photo: Courtesy Bethlehem Steel Co.

Remember the Village Blacksmith? That was in the 'good old days' of human toil and scarcity. Not that scarcity isn't still with us, but the toil is disappearing fast, and some day soon we are going to run out of scarcity. Here's a giant press forging a heavy slab of battleship armor. What power and technology! See the men hard at work watching the press work. That's the proper spirit.

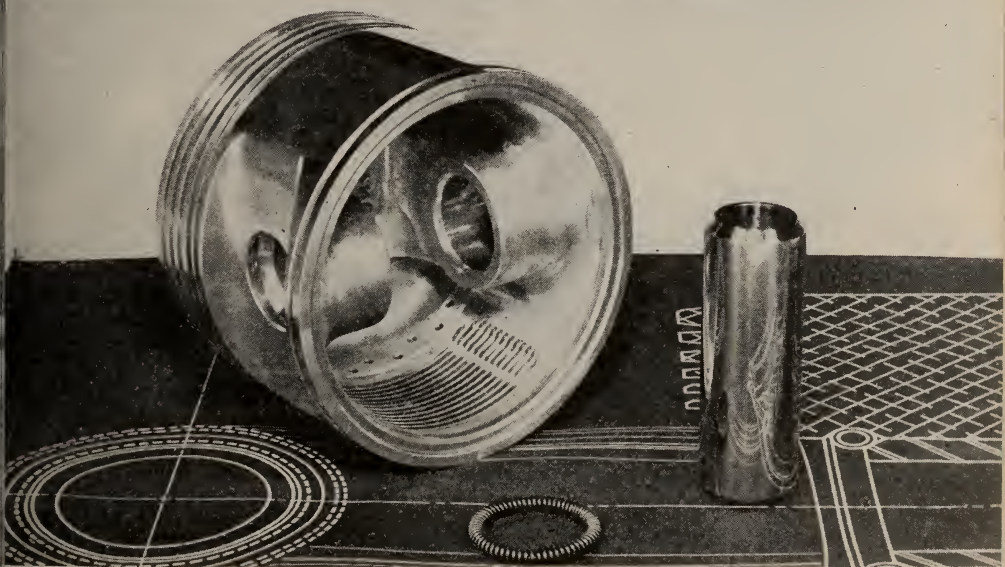


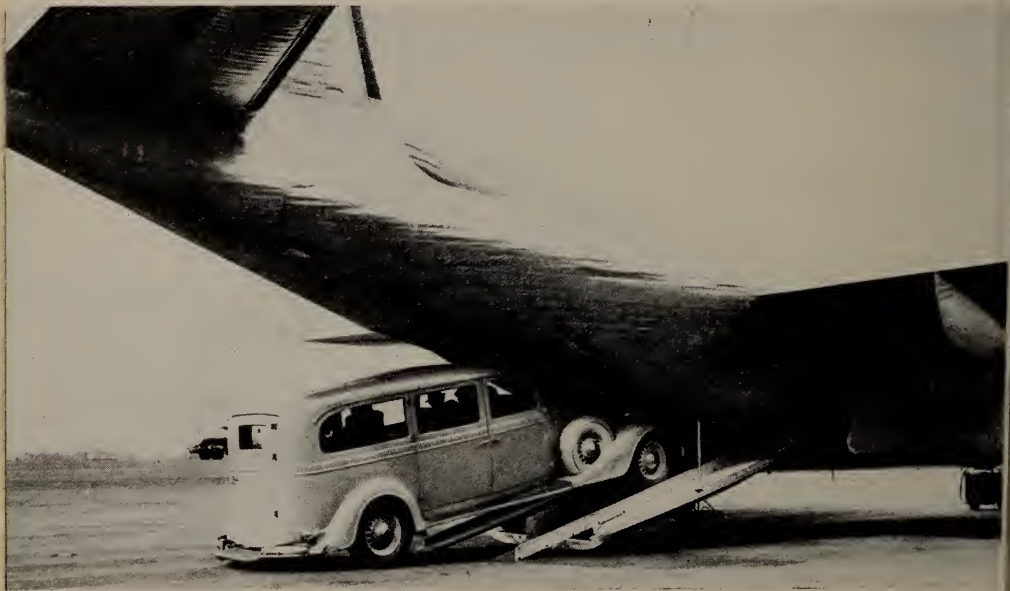
Photo: Courtesy Wright Aeronautical Corporation

An example of advanced technology. The mirror-like surface of this Cyclone part has a maximum deviation of 8 micro-inches, or $8/1,000,000$ inch. Total area of any superfinished part is decreased but load bearing area is increased due to greater area of contact per square inch. This gives greater tensile strength, greater resistance to corrosion, longer life, better operation.



Photo: Courtesy Erie Railroad Company

Oil trains forming in the yards at Marion, Ohio. Almost 1,000,000 barrels of oil are moved every day by the railroads. In 1918 they hauled 405,000,000 ton-miles of freight. In 1943 with 625,000 fewer freight cars, 21,000 fewer engines and a million less workers than in 1918, they hauled 725,000,000 ton-miles. That spells better technology, higher load factors, more products, less work.



Official U. S. Navy Photograph

Air freight transportation in the making, the RBI Flight Ship called the Conestoga, in use by the Naval Air Transport Service. Cargo capacity is 10,400 lbs., cruising speed 165 mph, flight range 1,700 miles. RBI is a spot-welded all-stainless steel, high wing job, 68 feet long, with an unobstructed cargo compartment 25'x8'x8' in size. It serves as a flying ambulance or freight carrier.

Continued from page 26 and cannibalism was openly practiced in many countries. The holocaust ended in a number of treaties signed at Westphalia on October 24, 1648. Protestants were granted complete freedom of worship.

Song Of The Lorelei

And now we are come to World War No. 2. What kind of a war was and is this? What are the motivating factors behind the scene? Has it been a war for the possession of a throne or a woman? The asking of the question answers it. Has it been a war for the independence of one nation from another? Clearly not, since all the combatants are sovereign states. Has it been a racial war? Not in the European field, at least, because all the combatant nations are of the same race.

America went to war against the Axis Pact of Fascism. But what is fascism? Not many Americans know. Most of them think of something vaguely associated with Hitler, Mussolini, or Hirohito. The so-called free press of America, in harmony with its ancient function of service to the status quo, has done an admirable job of throwing a smoke screen around the real nature of fascism. These characters were and are only the 'fronts' for a proposed mode of social operation. After they have been eliminated from the international picture, fascism will still be there in all nations. Fascism is a reversion of civilization which is proposed by its proponents as an escape from the political, economic, religious and social problems which have arisen as a result of the world-wide industrial revolution.

Where that revolution has advanced the furthest, its concomitant social problems have become the more insoluble. Consequently, the pressure for social change brought on by physical trends is greater in the more advanced industrial nations. However, the social and religious hangover from the pre-Reformation age of authoritarianism is more pronounced in those nations which have made the least industrial advancement.

Turn Backward, Oh Time, In Thy Flight!

This is why the world-wide conspiracy to institute fascism as a mode of social operation originated in the industrially backward nations of the Axis Pact of Fascism. And this is why that conspiracy was largely abetted and financed by reactionary political, religious, economic and social forces in the more advanced countries. It was regarded as insurance against impending social change. It is physically impossible for the Price System to solve its major social problems and still remain a Price System. Since this latter consideration is the ne plus ultra of our dominant social consciousness, we are left with no other course except a descent into fascism. The triple oligarchy of ecclesiasticism, private enterprise and the political state must be maintained at all costs.

Here we have the clue to the motivating factors behind this present war. It is a war in which religious, economic, social and political factors predominate. After fascism abroad has been defeated, the counter-reformatory social attitudes and policy of its proponents will still remain, in all nations. The defeat of fascism abroad will result in a victory, only, for the status quo ante. America will again be where it left off in 1939.

After this war all our internal social problems will again be with us, aggravated and multiplied. The pressure for social change will be intensified. The religious, economic, political and social forces which brought on this war will still be at work abroad as well as in America. So will the physical trend of events brought on by the advance of science and technology. America's future lies in obedience to its technological trends and not to the anti-social attitudes of the tripartite oligarchy of ecclesiasticism, private enterprise and the political state.

The only program of National Operations that can guide America safely through the transition period of the postwar era is *Technocracy's Program of Total Conscription Men, Machines, Materiel and Money with National Service from All and Profits to None*. It is America's destiny to move upward to a higher form of civilization, not downward to a lower one. America will have defeated its fascist enemies abroad only to lose in the end unless it liquidates its pro-fascist enemies at home. Investigate Technocracy!

Venus --- Here We Come

The Story of a 'Crazy' Engineer
by The Peripatetic Technocrat

'Does a machine tool have a normal life expectancy of a stated span of time? Yes—but time is not the yardstick to apply to determine when it should be written off.

'For a machine tool becomes obsolete not so much by age but by an inexorable law of industrial competition. Any machine tool—standard or special that can increase output per man-hour and reduce production costs "puts the finger on" less efficient machines—dooms them to comparatively early discard. For no manufacturer can long afford to produce with machine tools less efficient than those of his competitors.

'Production methods developed in wartime—increase man-hour output—. The rate of 2½ percent increase per year output per man-hour, established by a 12 year record of industrial production (1929-1940 Ed.) can be expected to reach at least 4 percent per year—compounded.

'Manufacturers must set a goal of 50 percent increased output per man-hour every 10 years—to maintain a high level of national prosperity and achieve its benefits in terms of security of jobs and wages for the greatest number of workers and the volume production of more goods for more people at lowest cost.'—Kearney & Trecker Corporation, Milwaukee, Wis., machine tool manufacturers, in an advertisement in *Fortune*, August 1944, page 213.

It's That Old Black Magic

To our way of figuring a 50 percent increase in output per man-hour means either that we can produce as much with a 50 percent decrease in the labor force; or produce 50 percent more with the same labor force.

If the first event occurs, then what happens to the 50 percent of workers who are displaced? How can a 50 percent technological displacement of the labor force be interpreted as 'benefits in terms of security of jobs and wages for the greatest number of workers'? If we displace 50 per-

cent of the labor force in the next 10 years and 50 percent of the remainder in the second 10 years, then 20 years from now there will only be 25 percent of the labor force, as of that year, holding jobs, and the other 75 percent will be on relief. How can this be interpreted as 'volume production of more goods for more people'? Also, even if the 25 percent can produce the amount stated, what will be 75 percent use for purchasing power? In addition, how long can our economy support a 75 percent relief load?

If the second event occurs, that is, we do not reduce the labor force but

raise the output 50 percent in the next 10 years, and do it again in the succeeding 10 years, where will we be 20 years from now? That's simple. We'll then have 100 percent more goods and services available; everybody will be working; and the mountain of finished products will be rising ever higher and higher. Ah! There's the rub.

If You Win, You Lose

Surely Kearney & Trecker must have heard about the so-called 'law of supply and demand.' Succinctly stated this Rule of The Game of the Price System dictates that the supply must always be restricted and the demand never allowed to express itself fully. If scarcity is not maintained 'supply and demand' loses all its capitalistic meaning.

Here we have a prominent machine tool manufacturer advocating the production of an abundance of goods and services without setting forth the consequences involved. Remember, the Price System is a system of trade and commerce organized not to produce and distribute goods and services for use but to produce and *exchange* commodities for a profit. Exchange means to buy and sell. In order to buy and sell, there must always be a scarcity. It is not physically possible to buy and sell an abundance. The reason is that abundance destroys exchange value.

As of this writing, 55 percent of our industrial production goes into war goods and 45 percent into civilian goods. The 55 percent is greater

than our entire production ever was in any one year before the war.

American technology is now flooding the entire world with 'jeeps,' 'ducks,' 'weazels,' food, clothing and all other types of war equipment. If that quantity of production were converted into civilian goods, the North American Continent would be wallowing in abundance at this time. In other words, the potentiality is here now. We don't have to wait 20 years. Even this greatest war of all history has become too small for the capacity of American technology. We would like to see Kearney & Trecker come out with another beautiful ad 'explaining' these points.

Jack And The Beanstalk

As far as we can see, there are only two ways in which a 50 percent increase in output per man-hour every 10 years could become valid. That would be for the Price System to enter into another long period of expansion; or for it to engage in a state of perpetual war. In the first case, the birthrate of new jobs created by the expanding economy would always remain ahead of the death rate of old jobs caused by a decennial increase of 50 percent output per man-hour. That would do the trick, all right, as long as it lasted. But, pray, how and where can the American Price System find another such Golden Age as it enjoyed between 1860 and 1919? Where can it find another period of expansion? Echo answers Where?

Strange as it may seem, there's a limit to our natural resources too. Between 1860 and 1915 physical production doubled every 12 years in the U. S. A. That makes the measly 50 percent increase every 10 years proposed by Kearney & Trecker seem like the proposition of a piker. But small though this 50 percent seems alongside of what has actually happened in our history, it is still not physically possible. Our total industrial production today is, roughly, 400 times greater than it was in 1860. Seeing as how we would have to start this new period of expansion from the production level of today instead of that of 1860, it is manifest that there are not enough natural resources left in America to sustain it for very long. Oh Where! Oh Where! Is My Little Dog Gone?

—*'Yo! Ho! Ho! And
A Bottle of Rum'*

The last and final white alley for the Price System on this earth, and especially in America, is to go into a state of perpetual war. This might keep the Price System going along in high gear for a little while longer. But would it? There are a few difficulties involved. In order to be a healthy economic stimulant, the rate of destruction of lives and resources would have to be calibrated to the load factor of industrial production. It would have to be a carefully manipulated war. This is difficult to achieve because it is contrary to the nature of war. Then, there's the power of

public opinion to contend with also. The suckers might get wise to what's going on and kick over the applecart.

Seeing as how this present, gigantic war has become too small for the technological capacity of America, we would have to devise something on a scale of magnitude suited to the capacity of a race of Paul Bunyans. It would have to be a whopper of all the whoppers. It would have to be total, indivisible, unidirectional, irreversible and indefinite. A genuine, dyed-in-the-wool natural war wouldn't answer our purpose, for two reasons, both the same. First, in the heat of battle, armies burn, blast and waste, in a period of time reckoned in pulse beats, what it requires nature thousands of milleniums to create. That's bad for long term prospects. The second reason is that in a genuine war both sides are out for only one thing, victory. That, too, is bad for long term prospects. Negotiation is better for business than victory. How and where can we cook up such a war? Echo again answers, Where? Another little item not to be overlooked is that we would necessarily require an enemy capable, also, of waging a war of the same calibre and magnitude against us. Who would our enemy be; and where would he get his resources? For the third time, echo weakly answers, Where?

Some Clouds Have a Silver Lining

After all is said and done, we can see only one possible out for the Price System, one way in which it might prolong its life indefinitely into

the future. But it cannot be found on this planet called the Earth. There are not enough physical resources left to maintain the Price System on the scale of waste to which it has become accustomed and which is absolutely necessary for its continuance. Also, technology is rapidly invalidating the merchandizing methods of the Price System. After the quacks who control our social order have doodled and diddled around to their hearts' content with every impossible alternative, they may at last strike upon this last one. The whole problem is so simple, it's a wonder someone hasn't thought up this solution before.

Briefly, here's the situation.

Our needs are twofold. Either we must have a virgin, global area in which to expand, or a super-duper, never-ending war. Where can they be found? Echo remains silent this time, because they do exist, in a far-off sort of way. Of course, it will take a little scientific doing to put it over. But that ought to be easy. Doesn't America have the largest number of research laboratories and the greatest body of scientists, technicians and skilled personnel on earth? Of course! Here we puff out our chest and stick both thumbs under our suspenders.

Haven't our scientists probed the mysteries of the 'fourth dimension' and the theory of relativity? Haven't they tracked down the cosmic ray, smashed the atom, made the electron jump through the hoop, and even weighed the earth? Haven't they

created new materials with molecular structures unknown in nature? Haven't they sat in their ivory towers for generations and handed down gems in pure science to their masters? Haven't these masters converted these jewels into exchange value on the market place? Haven't our scientists labored long and studiously for the God of Things As They Are? The answer is, they have. In doing so they have also unwittingly created a new world within the shell of the old. Incidentally, this new world is struggling to be born, without the benefit of science.

On With The Dance

But, let's have done with this tergiversation and get down to our solution of the great dilemma of the Price System. Here's how we'll go about it. We will set up a brain trust and put it to work on our primary problem of how to get a new period of expansion. Since analysis shows that it cannot be done on this earth, the run-of-mine scientist won't be very useful to us here. We will need a specialist type of scientist, one who understands extraterrestrial problems. You guessed it, we mean the astronomers and astro-physicists.

Ah! What a fine, devout, high-minded bunch they are. They will see our dilemma at once and get busy on the problem. After all, haven't we treated them very decently? That is, all except Copernicus, Galileo, Kepler and a few more. They were 'reds' anyway. We'll call a national convention of these worthy gentlemen. All

proceedings will be conducted according to our best democratic methods, of course. There'll be committees, caucuses, conferences in smoke filled hotel rooms, with tactful string pulling here and there. Everything will go strictly according to Robert's Rules of Order, with only the customary variations. The fact that the decision as to what must be done has already been made will not interfere with our loyalty to, and observance of, democratic traditions.

*'In My Father's House
Are Many Mansions'*

If we can't solve our Price System dilemma on this earth, perhaps it can be solved on some other planet. Get it? Yes Sir, we'll go out of this world and do it. After all, this is nothing new for us. Haven't we gone out of this world of reality before to conjure up imponderable abstractions that have no physical existence? Yes, indeed, the record is clear on that score. Our creation and use of money and debt are two cases in point. Neither one exists any place except in that limitlessly fantastic realm inside our collective heads.

Since we have ventured into that illogical region and emerged with two such juicy melons, we can face the outer realms of space with confidence. To be sure, there's a difference between the two adventures, but it's mostly one of tactics and physical operations. So we will venture forth into the solar system and find a new planet to exploit. The entire uni-

verse will henceforth have to reckon with the Price System.

The factors of cosmic probability will be carefully calculated by our astronomers and astro-physicists. At first glance, there seems to be two good prospects close by. These are Venus and Mars. Of the two, Venus seems to be the best bet. It is a younger planet than Mars and twice as big. In fact, it has four-fifths the mass of the earth. It has a dense atmosphere and probably could support human life. The only sticker here is that there seems some doubt as to whether Venus rotates on its axis. Because of its thick outer envelope of clouds, its surface has never been observed. Galileo demonstrated, as long ago as 1610, that Venus has phases like the moon. If it keeps one side toward the Sun constantly, as some seem to think, we'll have to let Venus stew in her own juice. It would be too hot a job to handle.

Come Seven, Come Eleven

Then there's the planet Mars. It is only half as big as the earth and is an old planet. It cannot offer us a new, global area to exploit. It's so old that most of its resources have probably been used up. But, because of its very old (probably) civilization, its culture may be very advanced. Besides that, it has a war-like reputation. This is one of the things we need, that is, a foeman worthy of our steel. Mars should be easy to conquer. It's a small world and has two satellite moons. They are called Deimos and Phobos. Deimos is 12,500 miles out from Mars, and

Phobos is a scant 3,700 miles out. They're both uninhabited. So we'll land there first, consolidate our position, pile up supplies and then blast the hell out of Mars with interplanetary buzz-bombs. This should result in a super-duper war that will pump new blood into the veins of our Price System.

Mars, at its closest, however, is all of 38,000,000 miles away from the Earth. Venus sometimes approaches as close as 25,000,000 miles to the Earth. The problem of transport will be easier to work out for Venus. Besides, if given the choice between an opportunity to exploit a new, global area, or waging a cosmic war, we would rather do the first. It's not so messy. Then, also, there's always the chance that we might get licked. One side always has to lose, you know. Of course, there's the technique of the manipulated war and the negotiated peace. We're 'hep' to that, too. It's sometimes better not to annihilate your enemy. You may need another war someday. After weighing the two propositions carefully, we may try the invasion of Venus first. There's something intriguing about the project. It contains a flavor of romance, shall we say? This always makes business more interesting. The planet Venus is named after the beautiful, and not very well-behaved, Goddess of Love and Beauty. Hot diggity! That decides it. Venus, here we come!

No 'Fools,' No Fun

At this point some iconoclast, per-

haps an engineer, is likely to stand up and inquire mildly how we propose to get to the planet Venus. There's always a pest like that around. Well, we're not revealing our strategy in advance. But we can say this much. It will not be done with rockets or space ships. That stuff may go over good in the science fiction pulps, but we've got a hotter idea. Since we are going to invade the planet Venus, why not let the planet Earth take us there? Catch on? The Earth will function as an unsinkable, unbumpable carrier for our armed invasion. We'll sneak up on the lady Venus, park somewhere close by in space (there's plenty of room) and then when the strategic time arrives just let her have it.

At this point up popped our pestiferous engineer again with these questions:

Are you aware, Sir, that the earth is moving in seven different directions at the same time and at all times? How are you going to counteract these forces? How are you going to steer the earth to its objective? Where's your motive power coming from?

Oh, well! It's a democratic meeting. Let him rave. But, say, come to think of it, that fellow is no astrophysicist. He's only an ordinary engineer. How'd he get in here? Throw him out! No! No violence, please. After all, there's such a thing as Robert's Rules of Order, and this is a democratic meeting. Let's hear him out with democratic resignation. Since he still has the floor and is

raving on, let's listen to what he has to say.

A Majority of One

I insist on an answer to my questions, Mr. Chairman. There is much evidence to indicate that physical laws govern the movements of all the planets in the solar system, and of all the galaxies in the entire universe. How are you going to suspend these laws? This proposition looks like a hophead's dream to me. It is true that the Price System has defied physical laws in North America for many years and gotten away with it. But there's a day of reckoning coming.

Why in the name of hell do we have to embark on such a perilous adventure just to create a new period of expansion for the Price System? We have been told that there is no other way out. We have been told that the problem of maintaining scarcity cannot be solved any other way. Well, I only wish to say that if such is the case, I'm voting against the proposal. The proper business of science is to serve mankind. I am an engineer. I have learned to "apply mathematical principles to the control of natural forces." I have learned that physical laws cannot be suspended, evaded, or violated. We can work only in accordance with their provisions.

It seems to me, Mr. Chairman,

that this entire proposal is typical of the nutty antics the Price System has been indulging in here in America since 1919. The frontier of expansion does not lie in any cosmic dreams of conquest. It lies right here in America within the framework of physical laws. If, as you say, the Price System can't do it, then let's scrap the damn thing and organize a non-price system that can do it.

At this point, at least nineteen young, husky astro-physicists and members of the Junior Chamber of Commerce pounced upon the red-faced engineer and threw him down two flights of stairs into the street. We thought that was the last of him. Then our proceedings proceeded in the usual democratic manner.

In Hoc Signo Vinces

There seemed to be some kind of a spell suddenly cast over our deliberations. Except for a few indignant groups muttering here and there, the assembled 'tycoons,' 'empire builders' and 'hard-headed executives,' with their satellite astro-physicists, sat looking at each other in a sort of quizzical, subdued manner. Suddenly an echo sounded out loudly. 'I apply mathematical principles to the control of natural forces.' Everybody shuddered. Then it went on.

"The time of transition from the old 'outmoded' Price System with its enforced scarcity is upon us. That which cannot

function ceases to exist. The march of technology is compelling the arrivation of the first social mass movement in history. America faces a rendezvous with destiny. The scientists and engineers of this Continent are the general staff of the New America. By their works ye shall know them. All the social theories of yesterday must be discarded. All the wild dreams for tomorrow are only dreams. The aspirations of human society on the North American Continent must be the projection of the technological pattern of this Continent. Technology is the social mechanics of the Power Age. All other proposals are but gestures of futility, straws in the wind. Technology in its march of power is serving notice that the old order is passing and a new civilization is clamoring at the gate. As technology moves up more power, the gates will go

down and a new leadership of men and things will be given to the world. Technology is notifying every scientist, technologist and engineer, and every capable man and woman, that they are automatically members of the general staff of the New America. Today it is a notification, tomorrow it will be a command."

The voice suddenly ceased. It was so quiet you could have heard a fly walking on the roof.

Then a big burly business man (ladies lingerie, we think) jumped up on the platform and roared out: 'That was no echo. That was that damn engineer again. He's wired the building for sound and is letting us have it from outside on the sidewalk. Let's get the — — — now!'

Pandemonium broke loose as 50 men rushed for the stairway.

There was nothing left to do but adjourn the meeting and call the cops.

Many a Stuffed Shirt Hides a Lame Brain

'The social conditioning of the scientists, technologists, and engineers of this Continent to the *value prestige* of this Price System, has brought them to the sad and sorry state where as workers in the field of specialized science they are the gods of this age, while as citizens they emulate the louse.'—Howard Scott, in *'Science and Society'* an article in *Technocracy* magazine, Dec. 1938.

'Only one man in hundreds of millions ever makes a complete recovery from his education and strikes out on a new road of his own, even if the road leads only to an outhouse. The rest of us are what discipline has made us.'—Eric Temple Bell, Professor of Mathematics, California Institute of Technology in *The Search for Truth*.

'So-called "democracy" has largely degenerated into the science of passing the buck to Providence and the bill to posterity.'—*People's Lobby Bulletin*, July, 1944.

Primer of Technocracy

by Education Division 8741-1

Methods of Technocracy

Continuing this series on some of the elementary principles of Technocracy, we approach the methods of Technocracy. These are totally different from the methods used by any Price System organization. It couldn't be otherwise since Technocracy is the only non-Price System organization in America.

Concurrently with the establishment of the body of thought called Technocracy, by its parent research organization, the Technical Alliance of North America, the originators of this scientific-social system of thought developed the methods of Technocracy for the extension and application of the body of thought. The Technocratic method has a well-defined technique consisting of three steps that arise out of the three-fold nature of Technocracy itself. Here again we find an unavoidable parallel with the three steps of the scientific method. Like them, the three steps of the Technocratic method consist of analysis, synthesis and operations.

The analysis is the collection and verification of facts in regard to the underlying physical factors. This analysis is carried out by means of observation, experiment and research. In order to get a clear comprehension of these basic factors, it was necessary to enter into many fields of

scientific knowledge, and also search back through the recorded history of man to its beginning. Further, in order to understand the relationship of energy to all life and thus to man's progression on this planet, it was necessary to trace the factor of energy back into biological, geological and astronomical evolution. In addition to uncovering the basic underlying, physical factors, the analysis also yields accurate information about the operating characteristics of the Price System. These explain the reasons for its low operating efficiency. The analysis of Technocracy is presented comprehensively in its 'Study Course' book and other literature.

The analytic step of the Technocratic method establishes the body of verifiable, factual data which makes up the static part of Technocracy. It's all well and good to be highly informed and have command of a huge fund of factual data. But this is not enough; in fact, it is only the first step. Something more is needed. It is necessary to synthesize the data, and attempt to interpret it. This is the second step of the three-fold method of Technocracy.

Next Issue: Methods of Technocracy—Synthesis.

Adequate topographical maps are available for only 47 percent of the land area of the U. S.—Department of the Interior.

Technocracy and Your Trade

The White Collar Worker
by Organization Division 8741-1

There are a large number of occupations listed as white collar work. The total number of such workers composes about 25 percent of the civilian labor force in the U.S.A. As a whole they are almost totally unorganized. Consequently, their economic status is worsening in relation to the remainder of the population. Also, they occupy an inferior bargaining position because their functional contribution to production is difficult to visualize.

The Comfortable Middle Class?

In the white collar category fall such citizens as those employed in banking, insurance, brokerage and related financial institutions, including real estate. It includes the office workers in mines, mills, factories, forests, fisheries, shipping, agriculture, transportation and communication; those in the graphic arts such as printing, publicity and advertising, and the employees of non-profit institutions. It also includes such workers in the service trades, in wholesale and retail trade and the professional and semi-professional group engaged in public health, industrial research, jurisprudence and other activities. Besides this, there are more than 3,000,000 Federal, state and municipal employees, such as clerks, postal workers, librarians and teachers.

In 1930 out of a total labor force of 48,820,920 about 5,421,408 were listed as white collar workers. Their number has increased since then. Aside from the white collar group of workers proper, there is another large group of citizens who are often

lumped in the same category. These are the millions of people with fixed incomes, such as pensioners, dependents of Servicemen, and individuals in the lower brackets living from the income of stocks and bonds. They are also affected by what affects the white collar group. Like them, they are caught between the vise of fixed incomes and rising living costs.

A Definition Is An Arbitrary Agreement

The term 'white collar worker' is usually applied to salaried employees as distinguished from wage earners. The salaried employee gets paid by the week, month or year. The wage earner gets paid by the hour, day or piece. The distinction is carried further in the differences in the type of work done by the two groups. According to the *Census of Manufactures*, white collar workers are 'officers, managers, superintendents, overseers, etc. and clerks, stenographers, bookkeepers and other clerical workers.' While wage earners are defined as 'skilled and unskilled workers of all classes, including piece

workers—and foremen and overseers in minor positions who perform work similar to that done by the employees under their supervision.'

There is no agreement as to the exact size of the white collar group of citizens. Louis Stark, veteran labor reporter of the *New York Times*, estimates that there are about 15,000,000 people in this category. The Pepper Senate sub-committee on Wartime Health and Education, which held hearings on the plight of the White Collar Workers, estimates there are 20,000,000 citizens in this group. Lewis Merrill, President of the United Office and Professional Workers of America, CIO, estimates there are 10,000,000 salaried workers. Just what is correct is difficult to say since the definitions vary. Most white collar workers consider that they belong to the so-called 'middle class' in America. On the other hand, a recent Gallup Poll reports that 70 percent of all Americans consider themselves a part of the 'middle class.'

Johnny Come Lately

One hundred years ago, the American Price System was in the handicraft-agrarian stage. At that time 77½ percent of the population lived on farms and only 22½ percent in towns and cities. In 1930, 78½ percent of the population lived in towns and cities and only 21½ percent on farms. This illustrates the expansion of industrialization and urbanization in America.

In 1870 the Census Bureau listed

only seven shorthand writers. In 1930 there were 775,140 women stenographers. This illustrates the expansion of the financial-commercial superstructure, accompanying the expansion of industrialization.

The causes behind this industrial expansion of the Price System in America have been fully revealed by the Energy Survey of North America made by Technocracy Inc. Some pertinent facts come to mind also from the findings incorporated in the U. S. Geological Survey's Water Supply Paper No. 579; and the studies of Dr. C. R. Daugherty. Here it is shown that in 1849 only 21½ percent of the power used in American industry was derived from sources outside the human body, such as coal, oil, gas, wind and falling water; 72 percent was furnished by human labor; and 6½ percent by work animals. By 1929 this condition had been more than reversed and 94 percent was derived from extraneous sources, while only 4.8 percent came from human labor; and 1.2 percent from work animals. This trend has been pointed out by numerous other sources.

This illustrates the impact of energy and technology upon the American Price System of production and exchange. The expansion of our industrial system caused by technology has brought an accompanying expansion in the debt structure necessary to finance the operation and expansion of industry. Along with this development the financial-commercial superstructure of administration and accounting became ever more complex and unwieldy, requiring a grow-

ing army of clerks to keep track of commercial exchanges. Among these are bidding, confirmation orders, purchase orders, invoices, shipping bills, statements, receipts, checks, drafts, money orders, contracts, sub-contracts and all of the tremendous mountain of paper work (institutionalized red tape) now involved in transactions carried on for private profit. The Price System debt structure also furnishes employment for an army of clerks engaged in keeping track of (collecting and paying) the fixed charges against production and exchange such as rent, interest, surplus, taxes, dividends and profits.

Unidirectional and Irreversible

Technology decrees an inevitable decline of man-hours per unit of production, total man-hours of labor necessary and consequently total mass purchasing power. These declines make compulsory the use of more of the very technology that caused them in the first place, so as to be able to lower costs, increase efficiency, validate the pre-existing debt and grab a share of the dwindling market resulting from shrinking total mass purchasing power. As the impact of technology develops and strikes deeper into the Price System, its structure will tend to align itself completely and unconditionally in obedience to the imperatives of thermodynamics. That is, no part of it can escape the impact of technology and energy.

At first glance, we seem to have what appears to be two contradictory trends produced by the same cause.

First, a decrease in total employment caused by technology and energy in the field of production of goods and services; and at the same time an increase in employment in the field of administration and accounting. Upon closer examination we find that the latter trend was not caused by an advance of technology in the field of administration and accounting but by its relative absence in that field during the expansion of the financial-commercial complex as a whole. In other words, technology has not yet invaded the office to the same extent as it has the production field.

If You Dam Up The River of Progress

The retardation of technology in the office is due to several causes. Among these are the large number of small businesses, employing white collar workers. There is also monopolistic control in the manufacture and sale of office machinery which maintains high prices and restricted purchasing terms. There is the fact, especially in small businesses, that the 'reduction in operating costs is frequently offset by the loss of the use of the capital invested in the machine.' — Lewis Merrill, President UOPA, CIO. In large businesses investment in office machinery is closed up because of the mistaken accounting practice of charging such investments against administrative costs alone instead of overall costs. 'It is primarily because the cost of office machines required a large volume of clerical work to justify the expenditure that only large scale employers

of white collar labor (sic) are using it to an increasing extent.'—Lewis Merrill.

Here is what John Mitchell in *Modern Office Management Methods*, publication 83 of the American Management Association, has to say:

Modern office machinery, like manufacturing machinery, should not be permitted to remain idle if it is possible to keep it in profitable operation. Therefore you should accumulate on paper the volume of work performed on each type of machine, without reference to the department in which the work is performed. This view of office activities will help you decide whether it is practicable to centralize all clerical work in a 'machine shop.'

Also, listen to what L. Gordon of the U.O.P.W., C.I.O., said in *White Collar Workers Organize*, written in 1938:

Certain offices have installed factory methods throughout, including piece-work, and bonus or wage-incentive systems. In the larger mail order houses, office employees work on a speeding conveyor belt, each performing a single operation; checking, number writing, market discount, indexing. The steady flow of work is so important in these firms that mail department clerks report at 6:30, credit department clerks at 7:30 and order department clerks at 7:45.

The Greatest Revolutionary of Them All

From this we can conclude that there is nothing to indicate that Technology will not invade the nation's offices and displace a large proportion of the white collar group. It has been doing this to a limited extent for years. The birth rate of new jobs created in administration and accounting by expansion of the financial-commercial complex has so far managed to stay ahead of the death rate of old jobs destroyed by technology. But the trend is operating and it will gather momentum as the Price System contracts. Between 1929 and 1935 management spent \$500,000,000 for new office machinery and equipment.

There is a long list of such machines, some of which have been in use for years to a limited extent, and later ones which are ready to be introduced. The functions of clerical work and accounting will be transferred to them whenever management yields the green light. Among these are the dictaphone, the wire recorder, electric typewriter, teletypewriter, adding, listing, tabulating, sorting and punching machines, book-keeping-billing machines, and statistical and calculating machines. No one knows yet to what extent electronics can be applied in the field of office work.

Besides the designing engineer, the efficiency engineer is also hard at work to take work away from the white collar worker. Air conditioning systems and scientific light-

ing, ventilation and insulation against noise, plus 15 minute rest periods in mid-morning and mid-afternoon have been proven to increase output per man-hour in offices. In other words, man-hours per unit of production must decline in offices as well as plants when technology is applied. And, the more of it is applied, the more is necessary. American management has a new, big bag of tricks all ready to release upon the already hapless white collar worker.

More Starch For White Collars

And why not? This is the *real* American way. The only way to produce more is to work less, in the Power Age. Once we understand that and accept the dictum of physical laws, the door of abundance, leisure, security, equal opportunity and physical democracy for all citizens will swing open wide.

The White Collar Workers compose a minority group within the framework of the Price System. The only way they can advance their immediate, short range, economic interests

is by the same method that other minority groups use. That is to organize, use pressure tactics and gain a differential advantage at the expense of some other minority group and the social body as a whole. But this is no solution of their problem, just as no other minority group can solve its problems that way. At its best, it's only a state of constant warfare to chisel an uncertain existence out of a dying economic order.

Today in America it is unnecessary for any minority group to suffer, because there is an abundance for all. Science and its stalwart offsprings, technology and energy, are pointing the way to the New America that is already here anytime we are ready to accept it. The white collar worker is an American and a consumer before he is anything else. He will rise or fall as America rises or falls. There is no hope for any minority group under the tyranny and regimentation of the Price System. But there is every hope for all of us under a scientific social order.

Investigate Technocracy!

Today Was Tomorrow Yesterday

"The universities, colleges and schools are abundantly supplied with teachers of history, but not one has a professorship for the study of the future. Yet we can see the future unrolling in the technology of the present, just as the modern age is the product of yesterday's advances. . . . The inventor of the automobile has had more influence on society than the combined exploits of Napoleon, Genghis Khan, and Julius Caesar. . . . Finding a social problem today that is not affected by a recent change in technology is a difficult task. . . .

We are all interested in what these new scientific discoveries are doing to us, to our homes, to our religion, to our government, to our schools, to our communities and to our businesses. It is the trends in the social effects of technology rather than trends in technology that should interest us as members of a changing society. . . . Planning without knowing trends is like building a house without a knowledge of materials."—Professor William F. Ogburn in *Machines and Tomorrow's World*.

Technology Marches On

Playing Dirty Tricks on the Price System

by Research Division, 8741-1

It's Never Quiet On The Technological Front

Much of our new technological methods and materials at one stroke reduce man-hours per unit, cut production time, replace heavier or more inefficient equipment, and at the same time conserve non-replaceable resources.

Two kinds of concrete do all these. Fibrecrete, an invention patented by U. S. McMillan, independent Chicago technologist, is made of 60 percent wood fiber and 40 percent concrete. It weighs half as much as concrete but is stronger. It is three times stronger than brick. So much for its potential value in construction. For war use, its bombproof qualities—cannot crack it with a sledgehammer and fireproof to 2,000° F.—would make it better than concrete for shelters and airfield runways.

Prof. George A. Maney, chairman of the Northwestern University Department of Civil Engineering, has also developed a new concrete. It is stronger than steel and lighter than aluminum! Its chief use is to replace structural steel columns, as it costs but a third that of steel. Tests with the new concrete at Northwestern's new Technological Institute have shown compression resistance up to 20,000 pounds per square inch, and

columns of the new material stood up under 1,000,000 pounds of pressure.

'Prof. Maney and his assistant, Maurice Lagaard, have designed a proposed plant for the mass production of the new material,' according to a report in the *Chicago Sun*, which adds that they assert 'by reducing the need for steel in building construction it will . . . conserve natural iron ore reserves.'

New developments in cameras and films, perfected for the armed forces, will enable movie producers to take pictures in natural color and within 15 minutes project them on a screen, according to Jimmie Fidler, Hollywood reporter. 'To the motion picture industry, this will mean that movies can be produced at greatly reduced costs. Only about one-third of the present technical equipment *and crews* will be needed . . .' he stated recently in his column. (Italics ours.) Incidentally, the movie industry is going to have to reduce its man-hour cost more than that when and if television is released to the public.

Gilbert Swart, research director, Harold Pushee, chief chemist, and Robert Iredell, chief engineer of the Goodyear Tire Plant in Akron, Ohio, have discovered how to make *homogenized* synthetic rubber, thereby

cutting one-third from milling time, one-third from man-hour time, and one-fifth from power consumption, in technofacturing tires. If all plants use this method, we will need one-third fewer men in the nation's tire factories after the war.

As if technology wasn't playing enough dirty tricks on the old Price System, the Monsanto Chemical Co. has announced in the following way some much-needed improvements they have ready for postwar America:

Non-Shrink Woolens
Non-Run Stockings
Non-Shine Pants
Non-Wrinkle Suits
Triple Wearing Qualities for
wool and double wearing qual-
ities for cotton.

Machinery has been designed, according to *The Iron Age Magazine*, June 15, for the high-speed mass-production of baking bread by use of infra-red lamps, instead of fire heating.

A few months ago, the disclosure that Virginia, Minnesota, 12,000 population, was the only city in the country which had a central plant for supplying the heating and hot water for the entire community, was widely described in the press.

It is still not generally known that this system is also in use at Shaker Square, a self-contained district in Cleveland, Ohio. Built in 1929, the district includes 700 apartments, housing 3,000 people, plus 45 stores,

a restaurant, a large theatre, and other buildings.

A single building supplies all the winter heat, steam and hot water for Shaker Square through 10,000 feet of conduit. Advantages are listed as:

1. Eliminates duplication of separate furnaces and boilers and janitor-firemen.
2. Decreases fire hazards.
3. Eliminates duplication of private coal delivery and ash-removal trips.
4. Saves 15 percent in overall fuel consumption.

Eight thousand tons of coal are burned yearly in the one boiler, supplying the 3,000 people's needs. The plant is so automatic that a crew of only 5 men is required.

Three new chewing-gum factories will be built after the war by the largest manufacturer, one on the Atlantic coast, one in the South, and one on the Pacific coast. All three will be 'designed so that raw materials can be taken in at the top of a tower-like section and be fed down to ground level automatically. Many mechanical innovations in gum-making machinery will be installed.' Nothing was said by the company about thousands of new employees, for very good reasons.

How has the increase in production of high-octane gasoline for planes and tanks been accomplished since Pearl Harbor? Technologies responsible, in varying degrees, are as follows:

Method	Percent of Total Increase
Use of <i>cumene</i> as a blending agent	23
Mechanical improvements, etc.	14
Conversion of cracking plants	14
Use of <i>codimer</i> as a blending agent	9
Addition of tetraethyl lead..	4
Use of toluene, etc.....	1
<hr/>	
Sub-total	65%
Increased production from new refineries	35%
<hr/>	
	100%

Thus two-thirds of the tremendous increase in high-octane fuel output is the result of *better use of equipment already in use* by chemical and other technological ingenuity. This is in line with Technocracy's well-known thesis of using equipment already installed whenever possible—after the basic requirements of minimum hand-toil and minimum use of non-replaceable resources has been satisfied. Other examples include Technocracy's program to utilize all available metals above-ground before mining any more, use of existing electric power lines as secondary feeders in its Continental Power plan, and raising the load-factors on (the more efficient of the) machines and engines already in use before building new ones.

The salt mines of Tse Liu Ching

in China, worked by 300,000 laborers using age-old methods (the mines are 2,600 years old), produce 250,000 tons a year, one-fourth of China's total salt production. — *Mechanix Illustrated*, Sept., 1944. Last year the U.S.A. produced 14,000,000 tons of salt with less than one-hundredth this number employed.

Salt is essential in many industrial processes. Last year the U. S. used 7,000,000 tons for soda ash alone, 2,500,000 tons for chlorine, 5,000,000 tons for other chemicals and 66,000 tons for synthetic rubber.

It would be hard to find a better illustration, than in these figures on salt production and use, of the difference between a handicraft-agrarian economy, such as China is, and the high-energy civilization of America. First, consider the small amount of salt, only 1,000,000 tons, used annually in China, a country of 400,000,000 population. Second, consider the tremendous amount of human labor required to produce it. Third, the tremendous amount of salt used by American industry in a country with only 135,000,000 population. Last, the small number of workers in America required to produce it.

By 1950 only 4,000,000 farms will be needed in the U.S.A. to produce a third more crops than the 6,000,000 farms grew before this war, it was stated in September, 1944, by Prof. Theodore Schultz, agricultural expert of the University of Chicago. That's only six years from now.

In the Question Box

by Public Speakers Division 8741-1

Isn't it rather silly to advocate Total Conscription in view of the approaching end of all hostilities and the demobilization of the Armed Forces? H.G.J.

Not at all. Total Conscription will be more necessary in the coming post-war-war than it is and has been during the period of armed conflict. During this present war America has mobilized only a minor part of her manpower for actual combat; and slightly more than half of her industrial production for the service of supplies. We have been waging this war with Price System methods and winning it the hard way. In the post-war-war that will break out all over America when fighting ceases on the battlefield, the entire population will be engaged.

You say that hostilities are coming to an end. It would be more correct to say that when the battlefield fighting stops, in foreign lands, the scene of hostilities will be transferred to the home front. 'After the Germans and Japs cease to try to kill us, it will be harder for most of us to remain alive than it is at present.' (*Fortune*, December, 1943.)

Remember this, there were two purposes involved in the design of Total Conscription. These were, first, to provide an overall, industrial, military and social design of national operations for winning this war in the

shortest time and at the lowest cost in lives and natural resources; and, second, to provide a design of social and industrial operations to guide America through the transition period when the war came to its inevitable end. We chose to ignore the first purpose of Total Conscription and have waged this war the hard way, the expensive way, the Price System way. We are winning but it is in spite of high cost Price System methods. America's great technology is doing the job, plus the fortitude and sacrifices of the men and women in the Armed Forces.

In the postwar era we may choose to ignore the second purpose involved in Total Conscription and attempt to revert to Price System methods as usual. But the past record of business and politics indicates no probability whatever of its capacity to solve America's postwar problems. All that business ever knew was how to buy low and sell high; and how to conspire to maintain scarcity. In essence, this means that the function of business is to prevent distribution. All that politics ever knew was how to juggle conflicting opinions; and manipulate one minority pressure group against another in order to maintain the status quo. In essence this means that politics function to prevent social change.

These functions of business and politics are normal to an economy

of natural scarcity. When any area reaches a stage of potential abundance, these historic functions of business and politics become actively anti-social. In the face of National danger from the Axis Pact of fascism abroad, we found that we had to abandon the traditional functions of business and politics temporarily, and to a certain extent, so as to win this war. This limited abandonment of Price System methods was carefully supervised and severely restricted in order to affect the status quo as little as possible. As the postwar-war for survival spreads throughout the decaying fabric of our social order, the necessity to abandon Price System methods completely and to set technology free will become ever more pressing.

Remember, there will be no end to the postwar-war; there will be no glad, mad day of armistice; no joyous ringing of bells and blowing of whistles to signify peace; no returning home to our loved ones, ever. We will all be in the same boat then. The killing will go on and on under the old familiar pattern of operations entitled 'The Peace of the Price System,' only it will be intensified and magnified by the application of more destructive technology. All the factors of social instability will experience a period of great expansion. Juvenile delinquency will be only a ribald joke when the entire social system is delinquent. It will be a succession of black, hopeless months, and perhaps years, wherein the aspirations of men for a better life will be

driven into the underground of despair and futility.

The overwhelming majority of Americans will battle against each other in want, insecurity and fear for the dubious privilege of chiseling an uncertain existence out of a dying economic system. While high overhead, above the muck of murder and perversion will reign the blessed, microscopic minority revelling in luxury and abundance, and pulling the strings to perpetuate the God of Things as They Are. This will be the picture of our postwar-war in the richest Continent on earth which is capable now of providing abundance, security, leisure, equal opportunity and physical democracy for all citizens from birth to death. No tongue or pen can do adequate justice to the hypocritical insanities of Price System methods of operations.

Remember, too, that the only possible outcome of this postwar-war is either a complete collapse of the entire social system with ensuing social chaos, or another glorious foreign war against some new, great 'evil' thousands of miles away. Foreign wars are always prescribed for domestic difficulties by the quacks who control the Price System. Yes, indeed, our prospects, individually and collectively, in the postwar era are blacker than the blackest hell so long as America continues under the tyranny and regimentation of the Price System.

And you say America does not need Total Conscription! What a strange social blindness this is! If

you need a placebo for your tender sensibilities, perhaps you can think of it as Total Mobilization. The name doesn't matter. America must mobilize *all* of its resources for the common good. That's evident, isn't it? The facts are that we have the Men, Machines, Materiel and 'know-how' to set up and operate an economy of natural abundance here, right now. Moreover, we have no choice in the matter but to do it or perish.

We will have to adopt a new concept of citizenship. We will have to abandon our present ideology of Self Service To Me and To Hell With Everybody Else. We will have to go in for National Service from All and Profits to None. We will have to tear down all the stinking Gods of the Market Place and set up a new ideal called 'America the Beautiful.' We will have to organize our entire social system along scientific lines in obedi-

ence to the physical laws by which alone it can operate successfully. We will have to relegate the politico-business method of operation to the same limbo where went the divine right of kings, the philosopher's stone of Alchemy, and the oxcart of our grandfather's day.

This we will have to do right here in America in the coming postwar era or pay the penalty, which has always been exacted for attempted violation of physical laws.

Do you still think we can win the looming postwar-war against ourselves without Total Conscription? Wake up and investigate Technocracy!

Editor's Note: Due to the timeliness and importance of this question, we have given it all the space allotted to this department. We promise not to let this happen again—unless it can't be helped.

Let's Enforce a Shortage of Scarcity

'We are running out of poverty and pretty soon there won't be enough to go around.

'I have said before and say again now that in this modern world we have got to learn to live with abundance and like it.—The avenues of scarcity end in futility and fascism.—'

James G. Patton, President of the National Farmers Union, at the opening session of public hearings on the Democratic National Convention platform held at the Stevens Hotel, Chicago. (As reported in the *Chicago Daily Times*, July 17, 1944, by John Dreiske.)

'... if the people of America in order to make the defense of democracy effective have found themselves obliged to coordinate all their forces and resources for the

purposes of war, it seems clear that a similar coordination must be made effective if we are to establish the coming peace upon an unassailably democratic basis.

'The mark of our economy has been largely one of restricting production for the purpose of maintaining price. That policy is to be found everywhere, but the defense crisis teaches us that stimulated production, not restricted production, is our great need. If, under the impetus of war, we are eliminating all restrictions on production, surely the demonstrated economic needs of millions teach us that we should have the same policy in peace. Only thus can we hope to distribute equitably among all the people the abundance nature provides.'—Senator O'Mahoney in the Congressional Record, January 11, 1944.

Voice of the Price System

Did They Say That?

By PUBLICATIONS DIVISION 8741-1

A job for every person willing and able to work is absolutely incompatible with the free enterprise system. It seems as unpopular not to want full employment as it would be not to believe in mother love, but we have to be realistic.

Marion B. Folsom, Treasurer of the Eastman Kodak Co. and Chairman of the Field Development Program of the CED on December 29, 1943. (As reported in *The Progressive*, June 19, 1944.)

Full employment would be incompatible with the free enterprise system which carries with it the right to a normal float of unemployed.

John F. Fennely, Executive Director of the CED on November 14, 1943. (As reported in *The Progressive*, June 19, 1944.)

Free enterprise has the open road.—Our traditional history of fair play gives us the assurance that industry will operate on the basis of enlightened self-interest.

Senator Scott W. Lucas of Illinois at a Democratic Rally held in Oak Park, Illinois, April 5, 1944. (As reported in the *Chicago Daily News*, April 6, 1944.)

It is no accident that the doctor who specializes in high blood pressure has a bunch of Federal

judges and top flight executives and corporation lawyers as his clientele. Every once in a while one of these high vascular tone guys turns up with a couple of hundred thousand dollars in his pocket—so I don't see any real good reason for discovering a cure for the condition.

Logan Glendenning, M.D., in his daily health column in the *Topeka State Journal*, July 13, 1944.

Do you honestly believe that delegates to a convention actually pick the presidential nominee? The trouble with you people is this—you've seen too many movies.

David Selznick, moving picture producer and delegate to the late Republican Convention, to a group interested in backing Lt. Comdr. Stassen, former Governor of Minnesota, for the presidential nomination. (As reported in Kup's Column in the *Chicago Daily Times*, June 30, 1944.)

I've been dealing with money all my life and I don't know yet exactly what it is.

The late Melvin A. Traylor, who was President of the First National Bank of Chicago and considered to be an authority on financial matters. (As reported in the *Chicago Daily Times*, July 7, 1944.)

Because of the absence of bubble gum from the market for

the past three years, it will be necessary to educate a brand new set of children to the use of it when the ingredients used in its manufacture are again available. Manufacturers who hope to recapture this market, which with other penny gum business amounted to more than \$18,000,000 a year, would do well to keep their trade names alive, even though the gum itself is not available.

Solemn warning on the financial page of the *New York Times*. (As reported in *The Progressive*, August 24, 1944.)

I am the best known man in the South. I am the best known man in the country. I am the best known man in the world.

Senator 'Cotton Ed' Smith of South Carolina to a country audience during a political campaign. The story was told by Governor Olin D. Johnston of South Carolina, recent pri-

mary victor over 'Cotton Ed,' who appeared on the same platform with him, as required by South Carolina law. (As reported in *Inside Washington*, a column edited by Bascom N. Timmons, in the *Chicago Sun*, August 3, 1944.)

Two maggots were crawling through Central Park in New York City. One fell into a deep hole. The other fell into a shallow one, where he found two carcasses upon which he was able to fatten for a week. Then he left the hole, walked back, and reached the deep hole where his friend had fallen. "Hello," greeted the weak maggot in the deep hole. "You look so well, so fat and prosperous. How'd you get so fat and prosperous?" The first maggot shrugged and explained: "Brains and personality."

A story told by Carl Sandburg and reported in Leonard Lyon's column in the *Chicago Times*, July 29, 1944.)

They Can Talk Big, Though

'As the defense expenditures of the United States rise in volume . . . so, too, will the government become the dominant "enterprise" of this country.'—Howard Scott in *Technocracy Magazine*, November, 1941.

What has happened since the Director-in-Chief of Technocracy made that prediction, three weeks before Pearl Harbor?

A total of 113 shipbuilding projects have been built on the Pacific Coast, for which 96.1 percent of the funds were supplied by the U. S. Government and only 3.9 percent by private enterprise. (*Iron Age*, March 16, 1944.)

The increased productive plants of just one company (Douglas Aircraft) amount

to 16½ million square feet, of which 12¼ million were government-financed. (Douglas 1943 annual report.)

In August this year, total offerings of securities to the American public amounted to \$12,524,839,000. Of this amount \$12,250,000,000 was in U. S. Government securities and an additional \$31,000,000 was in State and city securities! Of the mere \$160,000,000 issued by private enterprise, \$135,000,000 was for 'retirements' of previous bonds at lower interest rates, etc., and only \$23,000,000 was for expansion of plant and equipment. In other words, business doesn't seem to have the confidence in our Price System's future that it wants the American public to have.

The Infra-Red Routine Spectrometer, costing \$3,500, works 'without salary or sleep' in 60 high-octane gasoline refineries to balance the proportions of iso-butane and normal butane of every run. It enables operators to keep up with changes occurring after one hour compared to as much as 20 days previously required, a lag resulting from painstaking manual figuring.

Titled 'Postwar Jobs—Facts v. Hopes,' the Sept. 16 issue of *Business Week* magazine quotes some facts from a survey made recently by the U. S. Bureau of Labor Statistics for the WPB's Statistics Division. The figures are contained in a 275 page report gathered from 40 war plants in the Buffalo, New York, area. These large plants include one-half of all present factory employment in that area.

Here are the quoted totals of 35 of the plants which volunteered data on their postwar plans. Using their own figures:

	Percentage of War- Time Peak
Peacetime employment was	37,260 .34
May, 1944, peak em- ployment was	109,666 1.00
Postwar employment planned	54,000 .49

These figures are the first accurate and official figures revealed by private enterprise to a government bureau. *Business Week's* editors admit the postwar estimates are 'optimistic.'

'While the Americans plan what to do with Europe, Asia, South America and the Pacific, the Russians are planning how to rebuild their war-destroyed cities. So far I have not heard a single Russian planning the future of any country but his own.'—Anna Louise Strong in *The Nation*, August 5, 1944.

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TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

**Great Lakes Technocrat,
306 W. Randolph Street,
Chicago 6, Illinois**

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SECTION STAMP HERE

After Victory What?

Defeating fascism abroad:

Will not defeat North America's fascist enemies at home;
Nor stop the wastage of North America's natural resources;
Nor halt the creation of new mountains of debt;
Nor check the trend of technological disemployment;
Nor prevent a new and greater depression;
Nor end sabotage of the General Welfare by 'Free Enterprise';
Nor release technology from Price System interferences;
Nor solve North America's primary problem of distribution;
Nor realize the greater destiny of North America.

Defeating fascism abroad is only the beginning of the great task that faces North America. Unless we liquidate our fascist enemies at home we will have waged war against their facsimiles abroad in vain. North America must do the whole job that faces this Continent or go down to defeat against the forces of social chaos.

North America must avert the perilous postwar period ahead; arrest the processes of social instability; provide equal opportunity for all; promote individual security; underwrite a high standard of living; and institute a greater concept of citizenship on the basis of physical democracy.

Technocracy's Victory Program of Total Conscription of Men, Machines, Materiel and Money With National Service From All and Profits to None is the design of Continental operations now called for by the trend of events. Total Conscription can do the whole job.

INVESTIGATE TECHNOCRACY

GREAT LAKES TECHNOCRAT

25c

Volume III

Number 2

25c

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Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspect of Science; and Presenting the Specifications for Total Victory in America's War Against Fascism.



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TECHNOCRACY DIGEST

625 W. Pender Street

Vancouver, B. C., Canada

Dilemma of the Yankee

After The War—What?

By The Peripatetic Technocrat

For the past many months the American people have been bombarded with all kinds of postwar plans. During the recent political campaign several more were added to the lot. Think hard now and see how much you can remember in connection with any of these plans, indicating any probability that any of them can add to your general welfare and at the same time promote the interests of society at large. If it cannot meet that test, any so-called postwar plan is a fraud, on the face of it.

What is needed in America today is not another plan by another pressure group with an ace up its sleeve. What America needs and needs terribly is a scientific, overall design of National operations on the industrial and social front. The postwar bogey of the planners is real. But all of the picayunish plans so far advanced are too small to cope with it. America's postwar problem is too big for Price System methods to solve. Or, to put it another way, the quacks who control the Price System haven't got the mental capacity to get a correct conception of America's postwar problem. Besides, such ideas are bad for the status quo.

What Have You Got On The Ball?

If you ask a number of boys about to graduate from school what they intend to do in their post-school life, you will get a variety of answers from a variety of boys. Very few of them have a clear conception of the forces that are moulding their future. This is because they do not know their own real past and present.

The course that will be followed by the average boy after he gets out of school depends on several factors. Among these are his natural aptitudes; what he learned in school that will be useful in later life; and the things that will happen to him as the years go by.

The first two factors are the end product of his heredity and the conditioning processes of his environ-

ment, called training. The last factor is the series of events impinging upon his hereditary makeup and his training and thereby largely determining the direction and extent toward which they may and will be exercised.

All during his earlier existence, there was a flowing together of certain physical events and ideologies in his personal life which moulded the pattern that he will be most likely to follow in his later years. If we analyze these events and ideologies in our boy's past life and his present condition, we can get a very good insight into his reactions of the future. If, in addition, we knew what was going to happen to him in his post-school life, we could predict with a high degree of probability what he will 'make out of himself' later.

What Has America Got on The Ball?

Today every American is asking the question: 'After The War—What?' You can get a variety of answers to this question from a variety of citizens. Very few Americans, however, have a clear conception of the forces that are moulding their collective future. This is because they do not know the real past and present of their own country.

Whether we know it or not, the course America will follow in the postwar era depends on several factors. Among these are our national aptitudes, how much we have learned about America's social problems and the things that will happen in America in the postwar period.

The first two factors are the end product of our national heredity and the conditioning processes operating throughout our history, or our national training. The last factor is the sequence and trend of physical events impinging upon our national heredity and training and largely determining the direction and extent toward which our national aptitudes and knowledge of our social problems will be exercised.

All during America's history, there has been a flowing together of certain physical events and ideologies which moulded the pattern she will be most likely to follow in the postwar era. If we analyze these events and ideologies of America's past and present, we can get a very good insight into her reactions of the future. If, in addition, we knew what was going to happen to America in the postwar era, we

could predict what we collectively will 'make out of it' when peace breaks out again.

Pattern of Conflict

The confluence of events and ideologies on this Continent is typically American and different from the social pattern of any other area. America is the precocious brat of the industrial revolution. We grew up rapidly but haphazardly.

Our political, economic and ecclesiastical concepts were handed down to us from the long ages of human toil, hand tools and natural scarcity which preceded the industrial revolution. They were the operating philosophy, the Rules of The Game, the oligarchies that dominated the scarcity cultures of the Old World for thousands of years. When America was settled from Europe, these ancient ideologies were exported to the new world. They formed our original social pattern. They still dominate our culture today.

The physical events in American history have had far more influence upon its development than its ideologies have had. Moreover, the events have always been, and are now, in opposition to its ideologies. This conflict began with the birth of our nation, which birth was coincident with the birth of the world-wide industrial revolution.

That fundamental change in means whereby men live added another pattern of activities to the old 'hand me down' system of the past. This pattern consists of the

lication of the methods of science
o industrial production. Thus, a dual
ocial pattern was set up in America
rom its very beginning. It has con-
inued with increasing force and in-
compatibility down to the present
lay.

World War No. 2 has only served
o greatly intensify the conflict be-
etween the dynamic trend of physical
vents on this Continent and its static
ocial ideologies. The division is ir-
econcilable. Between these two forces
struggle must go on. It is a battle
between the dying past and the dawn-
ing future.

The dual nature of the American
ocial pattern as a whole is one of the
major elements in our problem as to
what will happen after the war. It
s blended into our national condi-
tioning. Out of these has evolved our
particular set of national aptitudes.
Let's review these elements of our
problem, one by one.

Hereby Devise And Bequeath

The North American Continent is
he most providential combination of
geological wealth, geographical unity
and racial homogeneity in the world.

Geologically it contains the major
hare of the world's known natural
esources. Almost every kind of min-
eral and metal is here in adequate
quantities for a high energy civiliza-
ion.

The geologic conformation of
North America's lakes and rivers
akes up an almost natural chain of
waterways. By means of an easily
ngineered system of locks, dams and

canals, they can be unified into a net-
work for hydrologic and climatic con-
trol; the generation of hydroelectric
power on a vast scale; low cost water
transportation; for recreational uses;
and for Continental defense. No such
fortunate geologic conformation of
rivers and lakes exists on any other
Continent.

Geographically, the valleys and
mountain ranges of America all run
in a general north-south direction,
uniting the whole land into unbroken
units from the Arctic ocean to the
Panama Canal. No such geographical
unity exists on any other Continent.

America's vast prairies and plains
contain immense stretches of arable
and natural grazing land. Every
known comestible either grows here or
can be raised here in abundant quan-
tities.

Its uplands are clad with great
forests of deciduous and evergreen
trees; storehouses of energy and con-
trollers of the water flow of a Con-
tinent, or rather were, before the 'em-
pire builders' came, but that's another
story. Its low-lands are rich with the
sedimentary silt of uncounted ages of
geologic change. Oil, coal and rich
top soil were deposited lavishly by the
slow processes of nature. All over up-
land and lowland a great variety of
wild life, fish, fowl and animal flour-
ished.

Racially, North America is today
the most homogeneous Continental
area on earth. There is only one
major culture, and two minor ones.
These are the dominant Anglo-Saxon
and North European culture of the

United States and Canada; and remnants of the feudal, fascist cultures of Spain and France. The former is south of the Rio Grande and the latter is in Quebec. North America has 19 percent of the earth's land area, but only 10 percent of its population.

From the Bering Sea to the countries of the Caribbean, the Continent of North America forms one potential, unbroken, organic, operating unit, industrially and socially. God did bless America with a magnificent heredity. What have we and our forefathers done with it?

For a Mess Of Pottage

For the first two hundred years of European settlement on this Continent, nothing much happened. The first white child of English parents, Virginia Dare, was born on Roanoke Island, Virginia, in 1587. Two hundred odd years later in 1790, the first U. S. Census was taken. The population had increased to 4,000,000. But the means whereby men lived were practically the same in 1790 as they had been in 1587. It was a handicraft-agrarian system of human toil and natural scarcity.

The double-acting steam engine was invented in 1782. In that same year America obtained its independence from England by treaty. Then our forefathers proceeded to go to town. During the next 162 years, we the American People, have accomplished the following:

We have explored and settled an entire Continent and plundered a large part of its natural resources.

We have increased its population to 200,000,000 people. We have cut down its forests in the U. S. until today only one-sixth of the original timber stand remains. We have plowed up and wasted its fertile topsoil until today 12½ percent of its cropland is ruined for further cultivation, and 41½ percent more is seriously eroded. Every year we allow one billion tons of its soil to be washed into the oceans. Some of its most productive mining districts are nearing exhaustion. Oil, high grade iron, copper and zinc ore are getting scarce. One-third of America's natural resources have literally been sold down the river of commerce.

When the white man came to America with his European Price System methods, the entire Continent of North America was in dynamic equilibrium with the physical forces of nature. It was rich with all kinds of resources and fecund with life. A few million red men in the first stage of social life lived there, hunting, fishing and carrying on a primitive form of agriculture. They warred among themselves but did not upset the delicately balanced forces of nature. The 'empire builder' came with his diseases, his poisoned whiskey and his eye for a bargain. He drove the red man out, upset the balanced physical forces of nature and converted them into profit signs in a double entry ledger.

Since then we have created more millionaires and paupers than any modern nation in history. Not content with pillaging the bounty of nature we have also ravaged the health and

well-being of our human resources. We have built more schools and churches than any nation before us; and also turned out more illiterates, juvenile delinquents and criminals than any comparable culture in modern history. In alcoholism and suicides we rate favorably with the best civilized countries; and in divorces and murders we are tops.

They Say You Died In Venice, Shylock

To be sure, our national record is marked by the monuments of many spectacular achievements in commerce, war and technology. The order of mention cited here is exactly the order of preference in which we have extolled these achievements, written them into our history books and preached them to rising generations. The tradition of the shrewd Yankee trader is one of our proudest and best known concepts. Our heroic feats on the battlefield come second. But you must search deeply into the reference sources to find adequate mention of America's scientists, technologists and engineers.

As a people, we possess a shining ability to postpone action on our collective social difficulties. In fact, we have never solved a single one of our major economic, social or racial problems. We even waged a four year civil war to avoid solving a perplexing area problem of this nature. The ghosts of Appomattox Court House still haunt the halls of Congress, pleading for recognition. A half million American lives were snuffed out,

for what? As a nation and as individuals, our guiding principle has always been, 'Let me alone!' We have always cast our burden upon the Lord and passed the bill to future generations.

To offset this, we have built up a commercial and political culture without peer or precedent. Our business men are renowned the world over for their astuteness in the pursuit of profits; and for the myopic social intelligence that goes along with it. The Robber Baron has become a Captain of Industry.

Our politicians are without equal in the semantic interpretation of hogwash into resounding public pronouncements. They huff and they puff, but they never blow the house down.

Our educational leaders are unbeatable at keeping their minds open to the interests of the status quo, and their eyes and ears closed to its social sabotage of the general welfare. Oh, the Humanities, those great classics of the past! They are so inspiring and so safe to talk about. Don't you agree, Professor?

Livelihood, Law and Learning, three fundamentals of social life. The Price System has successfully perverted every one of them into anti-social practices. Verily, the archangels of the nether regions, themselves, must be stomping up and down with glee on the red hot floors of hell.

As The Twig Is Bent

At our mother's knee, we are taught to be gentle men and women. In Sunday School we are taught to be

our brother's keeper. 'Lives of great men all remind us, we can make our own sublime, And departing leave behind us, footprints in the sands of time.' Those noble words are correct, for if we attempt to live according to the finer precepts of social life, our efforts become as footprints in the sands, obliterated by the first material wind that blows, and soon forgotten.

Fundamentally, the tendency of the average American is to be decent and to try to act at least half-way civilized. But, our political-commercial civilization is so organized that it pays its rewards upon the ability to lie, cheat and chisel. Honesty may be the best policy but the dividends are uncomfortably small. Sooner or later, every American has driven into his stomach and pocketbook the realization that to get ahead in the world he must take as much from society as he can get and give back as little in return as possible. Those are the Rules of the Game we play.

With the expansion of technology in America, the financial-commercial superstructure expanded also. Its operating principles, in essence, are the same as they were thousands of years ago. They can be boiled down to three simple rules: buy low; sell high; and keep things scarce. 'Free Enterprise' has never permitted the general welfare to interfere with its adherence to these rules. Its reward has been a free ride on the expanding growth curve of technology for 162 years.

This long free ride of 'free enterprise' has come to be looked upon as

having been ordained by omnipotence. The divine right of kings was no more solidly rooted in nothing than is the sacred bull of private enterprise. Every public figure in the land pays slavish obeisance to it. This empty concept has been so thoroughly drilled into our collective consciousness that today very few Americans have native intelligence enough left to question it.

All this is the least and meanest part of what we have accomplished in five generations. It composes part of the conditioning processes of our history. It is the Price System half of the dual American social pattern.

—So The Tree Is Inclined

In the process of applying waste to a Continent in the interests of a privileged minority pressure group we have acquired something worthwhile. We have built up an industrial structure with the finest array of technological equipment on earth. North America has more than three-fourths of the world's installed horsepower of prime moving engines; about three-fourths of the world's graduate engineers; and by far the largest body of scientists, technicians and skilled personnel on earth. This, along with our remaining non-recurrent and our replaceable recurrent resources, constitutes the real wealth of America.

Let us make it clear at this point that America's great technology was not brought into being by business. The reverse is the case. Technology came first and business travels on its coat tails.

The conditioning processes in our national history have been a mixture of constantly increasing technology and constantly retarding commercial and financial ideologies. The handicraft-agrarian physical environment of early America has progressed into the industrial, high energy physical environment of the Power Age. Our social institutions have not, however, progressed in harmony with the fundamental means whereby we live. So today we exist in a clashing duality of inner, empty ideologies, and outer physical realities.

For eight hours a day the average American is a functional citizen of a technological civilization, when he is on the job. For the other sixteen hours, he is an anarchist in a laissez-faire social system, organized to fit the conditions obtaining hundreds of years ago.

Individually, Americans are the smartest people on earth where their individual problems are concerned. On technical problems we are unbeatable. At the same time, we are the world's prize set of morons where our collective social problems are concerned. The point we can't seem to get through our thick heads is that the great majority of our individual problems have become collective problems of a technical nature. Therefore, the smart way to solve individual problems in the Power Age is by collective technological action.

A little observation and study of America's physical history will readily yield this point. We have the men, machines, resources and 'know how'

to construct a scientific social-industrial system that will be able to provide every citizen with abundance, security, leisure, equal opportunity and physical democracy from birth to death. Every step forward taken by science and technology has been accompanied by some increase in the general welfare, in spite of the continuing sabotage of business. Every obstruction thrown in the path of social change for the general welfare has been hurled there for the purpose of maintaining the status quo.

What We Didn't Learn In School

With such a messed-up national conditioning process extending over many generations, it is not surprising that most of us do not know what our social problem is. Yet we must understand that problem if we are to make the best use of our national aptitudes. Physical events are moving faster than ever before in our history. Our Price System of production and exchange for profit is becoming more inoperable all the time. It has been living on borrowed time and devious devices for the better part of a generation.

Now we are in a world war against fascism abroad. We are winning that war. Study the production record of the last four years, and it will be seen what we are winning with.

Is it being won by the super-exercise of all the anti-social behavior patterns common to the Price System? No, it is being won in spite of these. America's great technology is

winning this war. And, right here is the answer to our problem of After the War, What?

America is the number one technological potential of the world. Technology is the social mechanics of the Power Age. By this is meant that the conduct of human affairs on any area must conform to the technology of operating the energy consuming devices of that area. A change of political parties will avail us nothing. A civil war or revolution or a planned coup d'état in the Power Age of this Continent would be but the roads of chaos and annihilation. The aspirations of human society on the North American Continent must be but the projection of the technological pattern of this Continent.

Those words, written by Howard Scott in *A-9 Technocracy Magazine* in February 1937, contain the key to America's postwar problems. They are a part of the synthesis of Technocracy elaborated out of a long and careful analysis of the physical history of North America.

Ballad For Americans

America's technology is America's greatest national aptitude. We have demonstrated repeatedly that we can produce an abundance of almost everything. We have also demonstrated repeatedly our sorry inability to distribute it. The reason why it is impossible to distribute goods and services by Price System methods are simple. The Price System is organized to produce and exchange goods

and services for a profit; not to produce and distribute. The two functions are quite different.

If any real effort were made to distribute by the Price System, the system would collapse overnight. This is because all its operating rules are based on and revolve around the concepts of value, exchange and profit. You cannot play football with the rules of baseball. Neither can you effect distribution by the rules of exchange. If we want to distribute goods and services, we have to use the rules of technology, not business.

Fortunately, America has had a great deal of training in applying the rules of technology. Every engineer, technician and skilled person in the land knows that these are simply the laws of physical science. They work excellently in industrial production. They will work equally well in distribution. America has grown great in the last five generations in spite of the piratical record of the Price System. This greatness has been achieved by the application of the methods of science to industrial production.

This is the non-Price System habit of the confusing, dual American social pattern. It has had far greater effect on the real past and present of the land than the ancient ideologies that are interfering with its fuller expression.

The solution to our problem of After the War—What? is now becoming plainer. It is simply to free and expand technology to the greatest possible extent. The prescription simply calls for a greater doing of the thing we always have done well. Our great

est national aptitude must have a free rein. The scientific half of the dual American social pattern must rule the roost, or the Price System half will ruin it.

This is what Howard Scott meant by 'projection of the technological pattern of this Continent.' Here then is the solution to America's postwar problem. This is its security for the transition period from war to peace; and this is America's guarantee for the future.

Write it in letters of fire that go before us in the night lighting the way. Put it in black on the face of the Sun so that every man and woman may see it. For, the time is near at hand when America will need designed direction. God did bless America once. We cannot cast our burdens upon him again. This time we'll have to rely on ourselves.

The Answer Is Total Conscription

Technocracy is not a postwar plan for America. It is an all-time plan. The complete analysis of Technocracy shows what will most probably happen in America after the war. Briefly, this may be described as an intensification of the bombardment of the shaky Price System structure by technology. Technology will move up more power. It is the only way America *can* go, unless it reverts to a fascist chaos. In that case, three-fourths of us won't have anything left to worry with. We will have joined our ancestors.

It is not possible to stabilize a Price System economy after technology has

entered the picture. True enough, the Price System *WAS* static for thousands of years. But that was in the days of B.S., Before Science. America is now in the era of P.A., Potential Abundance or Power Age. The only thing we can do about it is keep moving along the same road we've been on, and move in on abundance. That's not going to be so tough, especially when you take a good long look at the alternative that fascism offers.

It is not quite enough to give a correct prescription for America's postwar problems by itself. It must also include the Directions for Taking. More than a year before the Japanese bombed Pearl Harbor, Technocracy published its design of national operations. This design had a twofold purpose in mind. First, it was intended to so organize America's entire economy that we could win the war at the lowest cost in lives and resources. Second, it contained a method for getting through the transition period from war to peace in the most efficient manner.

Technocracy's Victory Program of Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None, is the only possible solution to America's postwar problem. It is a blueprint of social-industrial-military operations for the war and the transition period beyond. It is the technique for getting from Here to There by giving the green light to America's great national aptitude for technology.

As we said before, the postwar bogey is real. America's postwar

problem consists of its major necessity to effect distribution. This is accompanied by a whole host of wailing, secondary problems. The whole lot of them, reinforced, will descend upon us like a pall as soon as peace breaks out again. There is no more escape

from this fact that there is from death or taxes. In view of the stumplebum record of the Price System, wouldn't it be a good idea to get ready.

Investigate Technocracy!

'TELL ME NOT, IN MOURNFUL NUMBERS'

'We hear a lot these days about 'free enterprise.' Radio commercials point out what free enterprise has done in building up the Nation and in producing the sinews of war. Advertisements in the newspapers subtly get across the idea that the boys in the armed forces are fighting for free enterprise, the American way. Candidates for public office are re-echoing the cry. — What's it all about anyhow? Is big business, particularly the National Association of Manufacturers from which the loud noise seems to stem, afraid of something? Are the big boys seeing ghosts? Who's threatening them? The New Deal — which they hate viciously — certainly is not threatening private industry. It is run by business leaders like Knox, Stimson, Vinson, Jessie Jones, McNutt, Byrnes and Crowley. — There's no formidable political organization of radicals in the Country today. — If free enterprise has done so much for the Country, and if it can do as much for the Nation as is claimed for it during the post-war years, who is there with an ounce of brains who would want to abandon it for something untried? — They talk much of post-war planning, but

none of them have ever come out with a cut-and-dried plan to avert another depression with its millions of unemployed. — Having only plans, which they know are no more than a makeshift, they are frightened. They don't know what to do, and so they recite slogans, cuss out the bureaucrats and other scapegoats, and invoke the gods against their unseen enemies much like medicine men used to do among the Indians. They know that sooner or later 10 million men will return from the war. They know that war spending will stop with the war's end. They know that our debt will amount to around 300 billion dollars. They know that in order to sustain such a debt we must have full employment and a high price level. They know that the responsibility devolves upon them to furnish this employment, to produce abundantly instead of pursuing a scarcity program as in the past, and they know this cannot be done under the old rules which allowed every man to grab all he could and hang on to it regardless of how others were affected.' F. V. Heinkel, President Missouri Farmers Association in the *Missouri Farmer*, February 15, 1944

Mud of the Last Ditch

The Trojan Horse is a Union Man Now

by Dwight W. Owens

The material presented herewith is an excerpt from *The Journal of Electrical Workers and Operators*, October 1944. The letter immediately following is a reply to it by a member of the Local Union.

L. U. No. 309, East St. Louis, Ill.—

Editor: A new arrangement made by our local president, George Viner, places Oliver H. Brown as press secretary for the inside branch, and myself, Russell G. Idle, as press secretary for the outside branch—we being a mixed local.

I look forward with pleasure to the prospect of cooperating with Brother Brown who is a splendid young man of fine appearance and whose mind is chock full of new ideas and good deals of union brotherhood.

This month we were confronted with the task of examining and making a report on a communication received from *Technocracy, Inc.*, wherein they ask us to support their effort toward total conscription. A committee composed of H. Ashby, R. Lambert, G. Fisher, O. Brown and R. Idle was formed. Our findings are:

Looking behind this total conscription effort at the group pushing it, the prospect looked very cloudy.

Technocracy Inc. didn't believe in democracy. Technocracy Inc. didn't believe in the ballot or any other

democratic principles to select officials. Technocracy was to gain control of the government by the present owners of industry, handing it to them as did Krupp and Thyssen in Germany to Hitler.

The more we examined Technocracy Inc., the more fascist and totalitarian it became.

Technocracy Inc. insists on a quick freeze of all society in the U.S.A. and Canada to gain its total conscription of all industry and labor; wherein labor would find itself frozen down deep in a block of crystallized society or in a technocratic strait-jacket.

Howard K. Scott's title 'chief' could be well compared to the term 'fuehrer' or 'duce' as Technocracy makes no pretense he is otherwise and the rank and file could not remove him.

The Technocrats pose as pseudo-scientists with a drapery of technical language; the 'erg', 'kilowatt', 'dine centimeter', 'joule', 'technate', 'junction or sequence', 'continental control', etc., to awe the layman.

All in all we found Technocracy Inc. a sinister, fascist, demagogic organization, dangerous to all democratic institutions of which the I.B.E.W. is one as a labor organization within our beloved democracy. We found no time or space for any effort to help Technocracy Inc. to institute a 'quick freeze' where we have so much to lose and nothing to gain.

Technocracy does show us a need of planning to meet the needs of a changing world, both international and domestic, but to be done always with democracy, liberty and freedom uppermost in our hearts and minds.

Oliver H. Brown, P.S.

Russell G. Idle, P.S.

Kansas City, Kansas

October 28, 1944

Dear Sir and Brothers:

Greetings to president Viner, and press secretaries, O. H. Brown and R. G. Idle, and also to the other three committeemen, H. Ashby, R. Lambert and G. Fisher.

And now, Brothers, may I exercise my prerogative as an American and as a Technocrat and take exception to a portion of 309's press secretary's letter published in the October 1944 Worker.

When you looked at the group pushing Technocracy, whom did you see? Maybe you were looking out from behind the same curtain as the official American sounding box from the seat of fascism located very close to that Eternal City on the banks of the Tiber, and from which blessings have been bestowed upon Dictator Franco of Spain, lantern-jawed Mussolini, Heel Hitler, Brazil, Argentina, and Quebec Province. It is common knowledge that the same source of misinformation viciously attacks Technocracy at regular intervals.

Technocracy is opposed to a democracy that is synonymous with WPA, CCC, adulterated foods and drugs, buried patents, communism, chiselers,

charity, depressions, dictators, debts, financial worries, foreignisms, greed, graft, interest, inflation, inferior goods, illiteracy, insecurity, loan sharks, lousy housing, malnutrition, misrepresentation, misinformation, mortgages, profiteering, poverty, dishonest politicians, quack doctors, paupers, race riots, rats, red tape, finks, swindlers, sweat shops, slums, slavery, watered stock (more—upon—request).

Technocracy is opposed to the every year, every two years, every four years a la Pendergast, Kelley Hague ballot, but proposes a real American ballot wherein every American votes every day many times a day for the things he desires and is able to back it up with the almost inexhaustible power of the Energy Certificate.

Technocracy's Total Conscription Program was to be under the direct supervision of our present constitutional Commander-in-Chief, Franklin D. Roosevelt. America's Industry (Men, Materiel, Machines, and Money) was to be put at the disposal of and for the benefit of all Americans, where it rightfully belongs, for the duration of the war and six months thereafter.

It is obvious that your investigation of Technocracy Inc. was very limited. May I suggest that you put in a little research on fascism (if you are sincere and unbiased). You might start by subscribing to some of the Technocracy magazines and other National Publications that correctly analyze the threat of fascism in America.

At this date the United States of America has installed a 'quick freeze' on twelve million of the cream of American manhood who, as members of our Armed Forces, are crossing the bridge of that great chasm separating the pleasures of peace from the horrors of war. They are truly 'frozen down deep' and whose 'straight-jacket' are they in?

Despite airplanes and the best machines we can produce, the roads to Rome, Berlin, and Tokyo will be lined with the graves of many an American soldier. A half million casualties may be expected in a few months. (Ed. note—they now exceed that number.)

A nation wallowing in unprecedented prosperity may not favorably impress the miserable, blood-stained soldiers on the front lines where the action is taking place.

May I call your attention to the last-but-not-least paragraph of Document No. 1, General Marshall's Instructions, issued by the War Dept. August 21, 1944: 'Naturally, our enemy seeks to delay his inevitable defeat by trying to create a split between the fighting American and the producing American. Actually, in this war more than in any previous one, there can be no honest distinction between 'home' front and any other front. We're all on the same front.'

We conscript our fighters, why not all of us, Men, all Materiel, all Machines, and all Money? That would put us all on the 'same front.' And that is exactly what Technocracy's Victory Program of Total Conscrip-

tion of Men, Materiel, Machines and Money is.

Technocracy had its inception in the early 20's when the brains of this Continent formed their first union, known then as The Technical Alliance. It lived and grew in spite of bitter opposition, as did our Electrical Workers Union, launched in 1891. To eliminate having the 'Old Shell Game' worked on them, they reorganized in 1933 as Technocracy Inc. Howard Scott was installed as Director-in-Chief, and advisedly will not be removed.

Technocracy will never be captured by communism, fascism, or any other ism. Discovery of this fact has made the opposition furious, and their ravings and rantings have reached a new low in tactics. Oddly enough, Technocracy Inc. is the only organization in existence whose only objective is 'to destroy itself.' As an educational organization, it is showing North Americans the manifold advantages of a Technate. When this Technate is instituted 'by a majority ballot,' Technocracy Inc., by its very articles of incorporation, is automatically disbanded and all Technocrats, regardless of title, Howard Scott included, assume a social part with all other North Americans.

Of course, all of this, to a certain 'block of crystallized society' is sinister, fascist, demagogic and dangerous.

In the 'Electrical Sequence' of a Technate, and in such a setup only, the electrical workers will secure a 'closed shop' in the electrical industry. Imagine, if you dare, the skilled

craftsmen and engineers in the electrical field actually steering and plotting the course of technology's greatest 'Sequence' as compared to our present status of 'lackeys and handymen.'

The I.B.E.W., almost without exception, covers the 'Electrical Sequence.' Its members, almost without exception, are now operating, have built, and are maintaining the greatest array of power technology the world has ever known—all of this despite the thousands of suppressed patents, talents, and energy so glaringly manifested in our present 'pseudo democracy' and so ardently supported by that certain 'block of crystallized society.'

To hold that the objects of the I.B.E.W. are unattainable and that the personnel of the I.B.E.W., from you and I on up to Ed Brown, do not have what it takes to run 'our business' and that the quack politician does is an insult to the intelligence of every member of the organization.

If the policies of a certain 'block of crystallized society' hold over into the postwar period, the members of the I.B.E.W. will contribute heavily to the large army of millions of unemployed. This period will produce individual financial chasms that even the reserves of the most prosperous 'defense workers' of Weldon Springs, Lake City, Sunflower, etc. will fail to span.

It is gratifying to note that Technocracy has shown you the necessity of social change. It is lucky for your skin and my skin that we received it

that way instead of in a muddy, blood and guts and bone splattered foxhole in Normandy, or in the bloated corpses strewn surf on the beach of Tarawa.

Our capacity to learn after nearly three years of war has improved beyond measure. The same blind refusal to learn which has characterized many of our actions is fast disappearing. We are learning, and learning how to learn faster. More Americans are now facing the cruel unescapable facts. More Americans are resolved to go 'all out' in this mad holocaust. And more I.B.E.W. locals than your committee has fingers and toes have endorsed Total Conscription of Men, Materiel, Machines, and Money. Our local too (not without opposition) endorsed this and passed a resolution demanding Total Conscription of Men, Materiel, Machines and Money. They found the time and space to place their demands in the hands of every member of the Executive Branch of the United States Government and every Senator and Congressman. This local's action is now a part of the Congressional Record.

Hundreds of other locals of other Internationals have passed similar resolutions, a demand for ON front so that more Americans may again stand six feet above American sod, and fewer Americans be buried beneath six feet of European and Asiatic mud.

Fraternally yours,

Dwight W. Owens
Card No. 629533, Local B5
International Brotherhood
of Electrical Workers

Look to the Monkey—You Monkeys!

Data by Research Division 8141-3

Those Whom The Gods Would Destroy

Sailors sometimes capture monkeys by a device which reminds us very much of the dilemma that 'free enterprise' faces in America today. A hole is drilled in a cocoanut and the milk removed. The hole is made just large enough to admit the monkey's unfolded hand. Then a handful of rice is placed inside the cocoanut. Mr. Monkey reaches in through the hole and gets his hand full of the rice. Upon attempting to withdraw his prize, he finds that the hole is so small that he is unable to remove his hand. Of course, he could let go of the rice, but he wants the rice and his freedom too. So he is caught, thereby losing not only the rice but the cocoanut and his freedom as well.

'Free Enterprise' is always whining about its 'inalienable right' to exploit and waste the natural resources of North America and its human components for all the profit the traffic will bear. At this time it has all four feet in the trough of public business for private profit. This publicly financed prosperity for a minority pressure group has been going on since the war began. 'Free Enterprise' has waxed fat and careless. It is suffering from softening of the brain. Witness the many magniloquent pronouncements it is issuing in various slick paper magazines about the super-wonderful things America will get—after the war. Not

that 'free enterprise' ever had the slightest degree of social intelligence. All it ever knew was how to buy low and sell high, and connive to maintain scarcity. Right now, however, 'free enterprise' is exhibiting less intelligence than ever before.

Monkey Sees, Monkey Does

It has gone the poor, dumb monkey one better. 'Free Enterprise' now has both hands inside the cocoanuts and is holding onto its swag with grim determination. Physical events are moving in to liquidate the situation. Not one 'tycoon,' not one 'empire builder,' not one 'captain of industry' has enough social brains to assess correctly the dilemma facing 'free enterprise.' There is not even one small voice raised for America in the picayune wilderness of the business world.

The handwriting is on the wall. But, nobody except the Technocrats are reading it. Well, it's the funeral of 'free enterprise,' not America. A fitting dirge will be the theme song of private enterprise: 'How much can I chisel out of society and how little can I get away with giving back in return?' There will be soft lights and slow music and much moaning at the bar when 'free enterprise' is caught with its hands in the cocoanuts.

Is this a time for fooling? Look to the Monkey!

Manufacturer's Blues

I Hate To See That Evening Sun Go Down

Data from Research Division 8342-1

News Item: The National Association of Manufacturers is conducting an intensive drive to line up every possible type of business in the N.A.M.

Every Day I Stand Outside Your Door

One manufacturer of our acquaintance has been receiving many letters. Some of them come direct from the N.A.M. Others come from supporting corporations who are already N.A.M. members. These latter urge the sheep who are outside the fold to get in the barn before the postwar storm breaks loose. The N.A.M. letterhead, of course, contains a properly impressive list of Price System celebrities of the type who dote on being called 'Captains of Industry.'

This device always carries weight because most people, including manufacturers, are thoroughly indoctrinated with the authority complex. This crippling mental affliction leads its victims to look up to society instead of around at it. For instance, the authority complex leads its victims to believe that a banker knows what money is, just because he handles a lot of it; or that a politician knows his own hind end from a horse's hind end just because a lot of morons voted him into a mahogany

lined office; or that the Chairman of the Board of Directors of any big corporation knows how to operate the physical mechanism of the corporation just because he sits at the end of a long table at Board meetings and frames financial policy and lays down the correct interference line to distribution.

The authority complex must be enjoyable to have, though. It saves one the trouble of thinking and the pain of disillusionment. The triple oligarchy of the Price System has always leaned heavily upon it. It's one of their main props.

One of the supporting, pressure letters to this manufacturer contains this sentence:

It is important that we do everything we can do maintain and develop a business and economic system which will give our sons and daughters, when they return from war, the same opportunities we had.

Now, here is really a nice thought 'the same opportunities we had.'

Do you suppose they mean the same opportunities that business had and fumbled repeatedly, to solve the late ten-year-long depression. Perhaps they mean the opportunity which business snatched greedily in 1932 to pass its debt burdens on to the government while retaining its special privileges intact. Surely they couldn't mean the opportunity that

business had to convert to war production in 1941, for national defense, and declined politely because their cut wasn't big enough. More likely, they imply mean the age-old, special privilege of business to chisel at the expense of the general welfare.

Bury Me Out On The Lone Prairie

The main bait which the N.A.M. sets out in its letter is the necessity for business to resist a proposed 're-vision of the Patent System.' It is asserted that the protection that the Patent System offers business may be legislated away by reformers. Apparently these enemies of business are trying to convince Congress that a policy of 'share the inventions' should be adopted. The letter admits that we have been moving toward such a policy 'to speed the war effort.' However, the N.A.M. states that it 'has never slept in trying to protect the patent interests of business.' A little further on the letter asserts that businessmen must 'employ direct and vigorous efforts to protect the basic principles of property rights with just reward to the inventor, manufacturer and investor.'

That crack about 'just rewards to the inventor' is a good joke—on the inventor. Perhaps, though, too many inventive-minded technologists have been forced to sign relinquishment of their patent rights, to get and hold a job, to appreciate it. Ask the inventor of Lucite how he feels about it.

The N.A.M. wasn't bragging, however, when it said that it 'has never

slept in trying to protect the patent interests of business.' The record (their own record) bears them out. From 1939 to 1944, seven patent bills, endorsed by N.A.M., were passed, while nine which they opposed were defeated. That's a good batting record in the interference league.

A slick paper, two-color leaflet (is there a paper shortage?) put out by the N.A.M. asserts that there are 24 bills regarding the patent system in the hopper for next Congress. N.A.M. fears that several of these are for 'putting patent rights and privileges in "public domain".' Wouldn't that be hard on the people? In this leaflet N.A.M. asserts that its goal is to 'Improve the Patent System as much as possible without changing it basically.' Here, at last, we have plain speaking.

Take this sentence and put in along-side the one in the letter about employing 'direct and vigorous efforts to protect the basic principles of property rights' and you get the tip-off. What is this basic right in patents? Almost 30 years ago Woodrow Wilson inveighed against it in his book '*The New Freedom*.' More recently, Senator O'Mahoney's Senate Committee exposed it to public view again. This basic right can't stand too much publicity. The people from whom it came might take it back again.

The basic property right in patents is to use them or to refrain from using them. In plain American talk this means the right to bury patents which might conflict with current capital investments.

The Public Be Damned

There is no double talk in the two sentences just quoted. N.A.M. intends to protect and preserve the right to bury patents come what may. That intention is 100 percent in line with the Rules of The Game of the Price System. Let's all give three rousing jeers at this point. In order to understand the next to the last statement above, it will be necessary for this reader to take a short, refresher course in the A.B.C.'s of the Price System. Here goes! Hang on, now, because we're going over the ground fast and we don't want to get buried up in double talk, a la N.A.M.:

A Price System is any social system whatsoever that effects its distribution of goods and services by means of a system of trade and commerce based on the valuation of commodities and employing any form of debt tokens, or money, as a medium of exchange.

According to this scientific definition, then, our Price System is founded on value and money. Commodities have value in strict ratio to their scarcity. Therefore, one of our first rules must be to always keep things scarce enough to return a fat profit. Since we employ debt tokens, or money, as a medium of exchange, widespread distribution of goods and services is impossible. Money possesses characteristics which fit it ideally to exchange commodities for a profit. Those same characteristics prevent its use as a medium of distribution.

Don't try to kid yourself, now, with any hemming and hawing. This is a crucial point. The Price System is organized and functions to produce and exchange commodities for a fat profit. The fatter, the better. It is not interested in widespread distribution. Why not? Wouldn't they make a still fatter profit then? No, pal, they would go broke. Remember, you have to keep things scarce to get a profit. This is so because 'value is the measure of the force of human desire.' When you create an abundance, which would be necessary for widespread distribution, you destroy desire, and consequently value.

Now, do you see why 'free enterprise' has to bury patents faster than the inventors can think them up. If they didn't, then value and scarcity would be destroyed, the Price System would collapse, and abundance would overwhelm the good old U.S.A. worse than the Jamestown flood. What a sad fate for the so-called 'under privileged,' for the pitiful, rickety childrer of the slums, both black and white for the millions of rejected 4-F's, and for the helpless, impoverished aged who look out with dimming eyes upon the jungles they are about to be freed from.

Of course, there's a great deal more to the analysis of the Price System than this little sample. But it's all much more depressing news for the Price System. So we'll skip it now. By the way! You can get the whole picture in the *Technocracy Study Course* book.

Ashes to Ashes, and Dust to Dust

But, let's finish our story. The point is that it is absolutely essential or the special privileges of 'free enterprise' that the right to bury patents be maintained. We have seen why. There's no use getting mad at N.A.M. If you had a chance to be a dirty whiseler, you'd be just as dirty as the dirtiest, if you could be that dirty. That's the American style. The thing to get mad at is the Price System. Here are two examples of Price System burials for you to chew on. Maybe they'll make you madder.

Dichloro-diphenyltrichlor ethane was invented 70 years ago by a German chemist. It has only come into use recently. Last Winter in the hands of the U. S. Army, it stopped a plague of typhus in Naples. This chemical insecticide is popularly known as D. D. T. powder. It is our most potent weapon for destroying insects that carry disease germs. Was it merely forgotten for 70 years, or buried? Who knows? But we do know why it pays the Price System to bury patents.

The ability of American technology to produce an abundance has been carefully buried away for at least the better part of a generation. America's

genius for mass production has always been held down. Under the stress and danger of total war, the overlords of business have been compelled by conditions to partially release technology from this restraint. The result has been that American industry has literally swamped the earth with all manner of materiel for war. And, we 'ain't seen nothing yet,' as the saying goes. We're operating only at half capacity. If America's great technology can do it for war, it can do it for peace.

Let them find an answer to that.

It will take more reams of double talk than N.A.M. can ever produce to bury the greater destiny of America. We suspect that one of these days in the not too distant future, the Price System will perform its last burial. It will bury itself deep in the limbo from which nothing ever returns.

Out of its grave will rise, like Phoenix, all the lost hopes, ideals and aspirations of human society, to bloom for the first time in the life giving sunshine of a higher form of civilization. Buried Patents? Yes, of course! But some one once said that that which goes down to the grave shall rise again.

Investigate Technocracy!

Philosophy—'It is all just words, words, words. Young man it takes nature to put us in our proper places.'—William James, 1842-1910. (American psychologist-philosopher and educator, and one of the founders of the pragmatic school of philosophy), as reported in *The Search for Truth*, by Eric Temple Bell.

'I have not sought nor do I seek either to force or ensnare men's judgments, but I lead them to things themselves and the concordances of things, that they may see for themselves what they have, what they can dispute, what they can add to the common stock!'—Francis Bacon, 1561-1626.

Twinkle, Twinkle, Little Star

FASCISM'S NEMESIS YOU ARE

Reprinted from a release of the General Land
Office, Department of the Interior

Twenty-eight of the brightest stars in the sky have lined up to help the United Nations deliver the knockout blow to Hitler and Hirohito.

The astronomical arrangement is set forth for the first time as an added feature in the 1945 edition of *The Ephemeris* (an astronomical almanac), technical publication issued annually for the past 35 years by the General Land Office, Secretary of the Interior Harold L. Ickes today was informed by Commissioner Fred W. Johnson. Headed by Polaris, the North Star, the stellar military aides serve as fixed positions upon which are based tabulations affording accuracy in the determination of the true meridian, the correct time, and the latitude of the point of observation. This astronomical information is essential in the navigation of planes and in the control and direction of artillery fire, as well as to the more normal peace-time pursuits of land surveying and civil engineering.

Prior to this year, these scientific data provided for observations merely of the Sun and of Polaris, and the tables prepared annually since 1910 by the General Land Office, *giving the position of these two bodies at each hour of each day in the year*, were in great demand by Government technical agencies, universities and scientific organizations, and the surveying profession. Consisting of pages of figures providing calculations to the

hundredths of a second, the abridged astronomical tables play an important role in determining at any minute of the day or night the true meridian as a standard line for surveying operations.

When the United States became engaged in global warfare, the Army discovered that these two 'sighting points' were not sufficient to meet the need for scientific gun-firing. Forces at and below the Equator found that it was not possible to sight on the North Star at any time; those in the extreme north were unable readily to aim their transits at the constellation almost directly overhead. As a result, request was made for the inclusion of additional data in the official Land Office ephemeris, and *cadastral* (surveying) engineers tackled the job, under the direction of Arthur D. Kidder, author and compiler of the publication since its first issue. Working throughout the summer months, the scientists D. B. Clement and Joseph C. Thoma, selected some of the brightest stars, charted them into groups which would furnish the most dependable points for military sighting use, and worked out their positions on the first and sixteenth of each month. Assembling these astronomical data into tables and technical instructions from which the *daily and hourly position of the stars may be computed*, the material was included for the first time in the General Land

Office's best-selling scientific publication.

Editor's Note: Who would have thought in grandpappy's time that it would some day be necessary to know the exact daily and hourly position for the entire year of the sun and 28 bright stars in the celestial sphere in order to wage war. The difference between grandpappy's kind of war and our kind today is that science now dictates what must be done. The

difference between shooting an artillery piece in the old days and shooting one today is the difference between a good eye and a table of astronomical data. This gives a good idea of what is meant by technological war. Some of these days, soon, we'll be forced to realize also that science is now dictating what must be done in the social field. This gives a good idea of what is meant by a technologically controlled social system.

HOW BIG IS A POUND?

While one branch of American technology is rapidly building ships for movement of huge volumes of supplies, and while aviation technology is constructing skyways cargo carriers for rapid movement of more restricted volume, technology in food production is speeding a process which makes both means of transportation much more effective.

That process is the compression of dehydrated food which saves up to 40 percent of the cargo space. Contracts have been let by the Food Distribution Administration for millions of pounds of dehydrated and compressed cheese-flavored and pea-flavored soya soup.

Compressed foods appear as compact blocks, usually wrapped in cellophane or treated paper. A brick of compressed carrots $2\frac{1}{4}$ by $6\frac{1}{2}$ by $4\frac{1}{2}$ inches weighs only $2\frac{1}{4}$ pounds, yet it can be reconstituted to make 50 to 60 servings.

A small volume of compressed food delivered rapidly by cargo planes

can make a big difference to fighting men in our isolated posts all over the world—especially where there are no warehouses, ports, or usable highways or roads.

And it can be done with the minimum loss of American materials, for no large quantities of limited or irreplaceable materials are used in preparation, packaging or delivery.

Machinery which can be easily converted for food compression is already in existence in many plants, and several firms are now turning out new compression equipment.

This is one more example of speeded up technology due to the war. It is not the spectacular type, but it is nevertheless a powerful offensive weapon.—From USDA Release.

Uncle Eph lived down in the Blue Ridge. Said a visitor: 'I'll bet you've seen plenty of changes here in your day.' 'Sure have,' agreed the old man. 'An I been against very single one of 'em.' (From the *Book Try and Stop Me* by Bennett Cerf)

The Valley That Power Made

PILOT MODEL FOR MORE OF THE SAME

Every profound change in the general welfare is a physical change and every physical change is profound.

James P. Pope, director of the Tennessee Valley Authority, in an address at Atlanta, Ga., in reviewing the remarkable record of the past decade, pointed out that at the beginning of the Federal Government's program only one farm in nine had electricity. In that period with TVA and the Rural Electrification Administration leading the way, the average has been reduced to one out of every two-and-a-half. In the South, where the average was one out of every 36, one out of every four now has the benefit of electric power.

'In terms of human welfare,' Pope declared, 'this record is one of the most important events in history.' In the short period of ten years more American farms were electrified than in all the years before. To the farmer struggling with 19th Century methods to maintain a balance with the efficient mass-production of modern industry, electricity was a godsend.

The electricity brought improved community life and improved relations between rural and urban people. The health of the communities touched by the magic of electricity showed an amazing improvement. 'A country doctor over in South Carolina said

recently that electric refrigeration had caused a reduction of 75 percent in one of the common ailments of his community,' Pope asserted. This doctor was able to increase his practice by 30 percent because he could use electric lamps and other equipment made possible by electricity. Reported in *The Progressive*, Feb. 14, 1944.

'THE story of the Tennessee Valley in the past decade is the story of a great change. The building of the 16 new dams has transformed a wandering, inconstant, and dangerous river into a chain of broad and lovely lakes carrying a heavy movement of barges of commerce—250 million ton-miles of traffic a year, and steadily growing. Waters once wasted have been put to work, night and day, producing electricity, 10 billion kilowatt hours a year to lighten the burden of drudgery, to turn the wheels and heat the furnaces of scores of new enterprises representing hundreds of millions of dollars of private investment.

'The change is told, too, in the land. Fields that had grown old and barren with misuse now are vigorous with new fertility. The gullies and erosion that had damaged 7 million of the 8 million cultivated acres of the Valley are healing. On 3 million acres dirt farmers, pioneers in new scientific methods, sponsored and aided by the T.V.A., have shown what the whole Valley will soon be able to do. Their land produces from 30 to 60 per cent more than before of better quality crops, while preserving the top soil for the years and the generations to come. The same story of change extends to the forests of a Valley that is more than half wooded. The development of minerals is still another part of the change.'—David Lilienthal, in *The Progressive*, July 10, 1944.

Fable of the Rosebushes

Once upon a time there was a wise and gentle old man. He lived on his estate, an island of beauty, in the rough and uncared for landscape surrounding his land. In order to alleviate this disturbing ugliness he decided that the winding roads and the fences of his neighbors should be planted with rosebushes.

Certainly, if he would offer to bear the cost of plants and planting, the adjoining owners of property would permit him to proceed with his plans.

But no: they objected on varied grounds, all of equal stupidity.

However, he was a wise old man. He had his caretakers plant rosebushes all along the borders of his grounds and instigated that one night some of the bushes were stolen. Thereupon he raised a great big noise of fury and protest against this stealing, without locating the 'thieves.'

The next night many more rosebushes were stolen. His caretakers planted many more bushes and spread the news of this stealing and threatened to surely catch the thieves the next night.

More and more rosebushes were stolen and planted. And finally—for many more miles than the wise old man had planned—rosebushes were planted, which blossomed forth beautifully during many Springs thereafter.

He who creates a new idea does so with the expectation that it will be stolen. He who creates a new system of precision measurement does so with the knowledge that his system will be used when more precision is required.

INVESTIGATE TECHNOCRACY

NO FABLES HERE

'Man's ability to control the stored energy of coal and oil is . . . at once the distinguishing characteristic and the basis of modern civilization, and the events of recent history are reflections either of improvements in the methods of using mineral fuels or nationalistic intrigues and struggles involving the control of one or both of these mainsprings of industry and keys to economics and military power.' (W. T. Thom Jr., professor of geology at Princeton University in his book *Petroleum and Coal—The keys to The Future*)

' . . . Citizens of industrial society must consume more abundantly not because it is their right to do so and not because justice or equality or any similar

shibboleth is a valid guide to economic welfare, but because if they do not industrial society will collapse.' (From *Development of Collective Enterprise, Dynamics of an Emergent Economy*, by Seba Eldridge and Associates, University of Kansas Press, as quoted in *The Progressive*, October 16, 1944)

'There will be little drudgery in this better-ordered world. Natural power harnessed in machines will be the general drudge. What drudgery is inevitable will be done as a service and duty for a few years or months out of each life; it will not consume nor degrade the whole life of anyone.'—H. G. Wells in *Outline of History*.

From the Camera's Eyevuew

In Time of War, Prepare for Peace

Law of the Jungle

The average American soldier is as courageous as the soldier of any other nation, and in most instances far more adept and resourceful. When it comes right down to cases, he is not afraid of anything that may happen. He can take it as well as dish it out. On dozens of war fronts all over the world, such Americans are united as never before in the history of their country.

On the home front other Americans are also united as never before in the history of their country. But this unity is of a different color than that exhibited by G.I. Joe. The American soldier has surrendered his constitutional privilege to pursue individual and economic gains, for the duration. He is enrolled in National Service. The American citizen in the civilian economy has not surrendered anything. He is riding a high tide of economic prosperity. He is enrolled in Individual Service.

Here we have two clashing behavior patterns. The soldier in National Service is dedicated to the country as a whole. The civilian in Individual Service is dedicated to personal gain. Except for a few patriotic Americans, the home front is a unity in rejecting all suggestions that would put civilians on the same basis as the Armed Forces. Every minority pressure group in the land is scheming to further enhance its differential advantages at the expense of the majority, which includes all other minority pressure groups.

G.I. Joe knows all this by rote. He ought to because he spent all his life as a part of that economy until he went off to war. He also learned much from his father who fought in the first World War and was promised a postwar world 'fit for heroes to live in.' Finally, he remembers the 'heroic' feats of deprivation by which his family was able to survive the Great Depression. The soldier knows that the war will end some day and he will return home again to a competitive economy. He knows that the Rules of the Game of the Price System require him to chisel a 'place' for himself or be disinherited as an economic outcast from society.

Americans Fear Only Americans

The American soldier knows that many, if not most, civilians have been doing rather well for themselves since the war began. He knows, or thinks, that they are intrenching and consolidating their economic positions while he is away. And, he thinks that he will be at a disadvantage in spite of his so-called 'Bill of Rights' and all the political schemes to assist him. Here is the only thing the American soldier fears. He is afraid of his fellow Americans and of the postwar era. This is the source of his distrust of civilians.

In return, the civilian distrusts the soldier. He is afraid that G.I. Joe will take his job away from him; or chisel into his business when the war is over. He is afraid that the returning soldier will get a preferential advantage denied him. The civilian supports the war to the extent that the Rules of the Game of the Price System permit. But the same Rules dictate that he must provide for his own postwar position. The Price System guarantees no citizen anything, except the opportunity to exercise his mercenary instincts. The penalty for non-compliance is want and poverty in the midst of plenty.

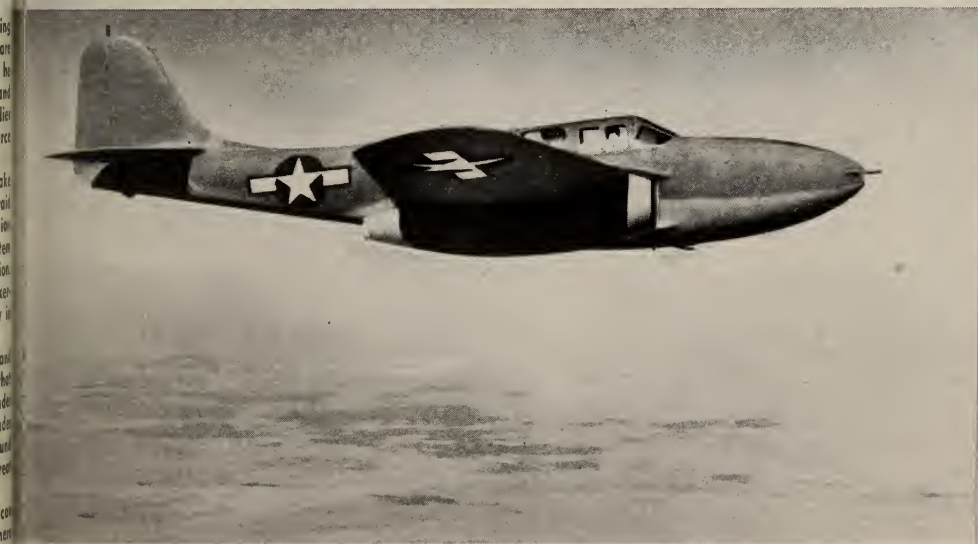
The Price System regiments its human components into compulsory economic and social hostility against each other. That is how it operates. Is it any wonder that America is a welter of social confusion? The confusion is organized. Is it any wonder that Americans are afraid of each other and the postwar period ahead? The wonder is that we have done as well in this war as we have. The answer is not to be found in the ethics, morals or principles of the Price System, if any. It resides in the Great Technology of America, grown to maturity in the Power Age.

For the first time in history, we must prepare for peace in time of war. This can only be done by the installation of an overall design of National Operations. There is such a blueprint ready and waiting to be installed. It will guarantee a secure post-war position for every citizen, soldier and civilian alike.



Photo: Courtesy Anheuser-Busch

the Missouri by steamboat to Independence, then over the Oregon Trail by oxcart and covered wagon. The pioneers followed the Platte River to Fort Laramie; through the South Pass and along the Sweetwater to the Snake River; then via Fort Hall along the Snake River to Whitman Mission; and down the mighty Columbia by raft to the valley of the Willamette. Four months of plodding across half a Continent.



Official Photo U.S. Air Forces

are still living who made that laborious journey. Now we can cover the same distance in four hours. Here is the P-59A Airacomet, first American jet plane. For operating description see July-August, 1944, G.L.T. These two pictures typify the speed of America's progression and the distance covered, from the oxcart to the Power Age. It was done in the span of little more than one long lifetime.

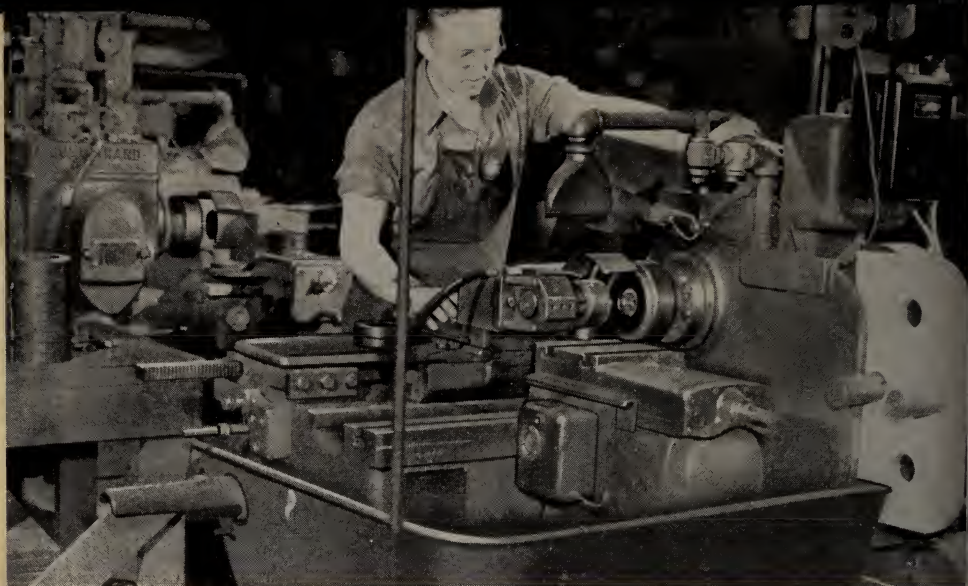


Photo: Courtesy Sundstrand Machine Tool

The turning lathe is the parent of all machine tools. Here the complete cycle of operations is automatically controlled. It is boring, undercutting, breaking and forming the corner and facing the outer surface of a commutator assembly at one pass. Job was formerly done with manual controls and took 6 minutes. Now it is done in 29 seconds; and one man handles two lathes. That's good technology.



Photo: Courtesy General Motors Corporation

Here is a giant two-man lathe machining the barrel for a 90 mm. gun. This piece requires the use of 353 other machine tools. Such tools lie at the base of industrial production. If machines make jobs as some dithyrambic advertising writers assert, why was there no unemployment prior to the machine age, say 1910 A.D.? Why is the death rate of old jobs rising faster than the birth rate of new jobs?



Photo: Courtesy General Motors Corporation

This is a broaching machine working on 20 mm. anti-aircraft gun barrels. It draws four broaches, each slightly larger than the one before it, through the barrel and also cuts the nine rifling grooves simultaneously. This machine reduced a one and one-half hour operation to 12 minutes. Man-hours per barrel must decline. Basic machines produce basic effects industrially and socially. Do you see?



Photo: Courtesy Caterpillar Tractor Co.

This Diesel D8 Tractor with Athey Mobiloader loading stock piled ore into railroad cars on the Mesabi Range in Minnesota. Material is moved 80 feet and loaded at the rate of 330 tons an hour. Imagine doing this with oxcarts and shovels! How much could you load in one hour? The difference is technology. How long would it take to settle up a new frontier now, if we had one? But where is there one?

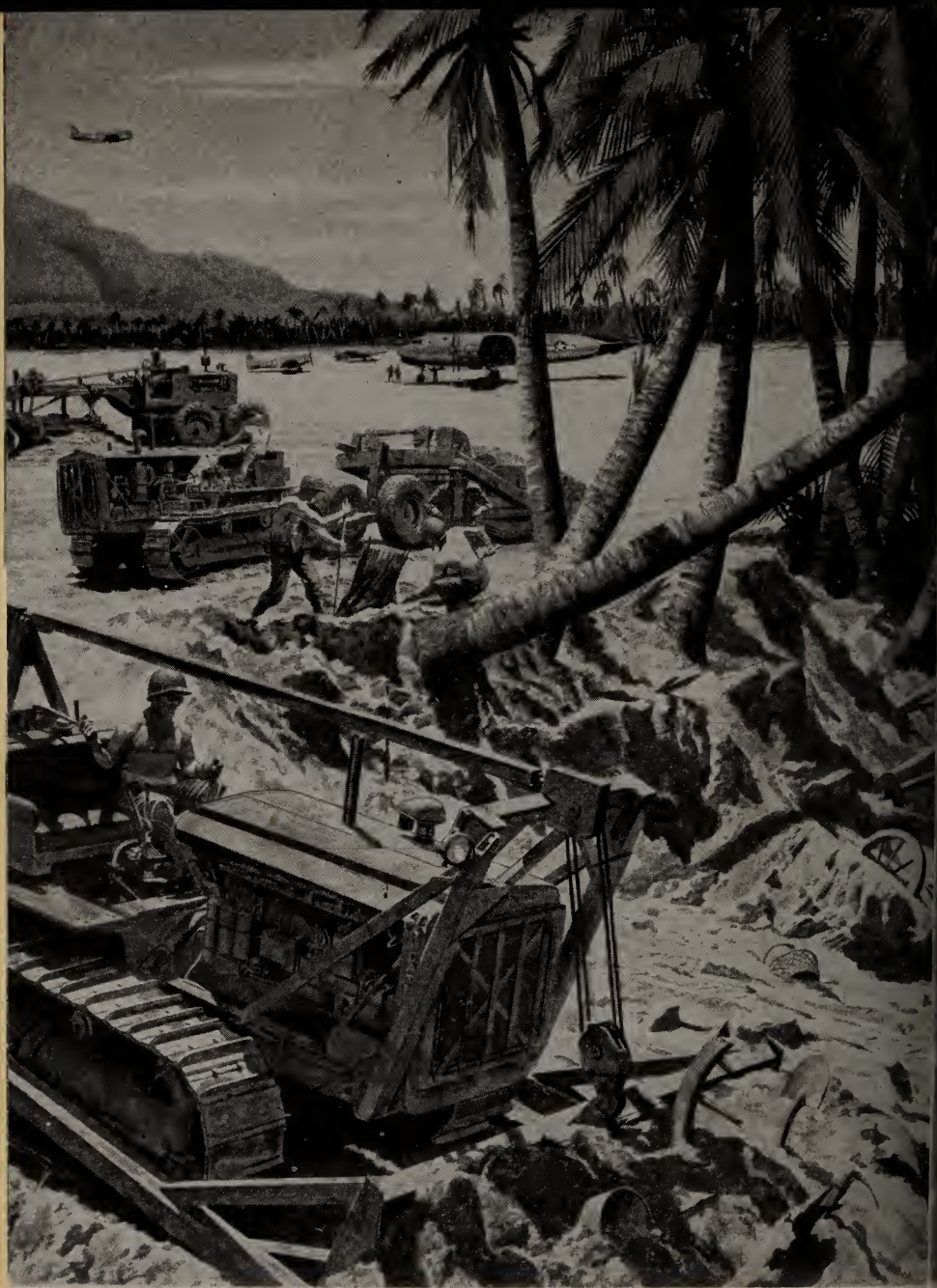


Photo: Courtesy Caterpillar Tractor

Diesel bulldozers, scrapers and earth movers, clearing a landing field somewhere in the jungles. More in use close to the fighting front have armored cabs for the operator. American technology followed American soldiers on dozens of war fronts. Japan hasn't got a chance against the stuff shown in the first six pictures. The oxcart age is gone in America but oxcart thinking is still with us.



Kansas City Star Photograph

Automatic lift unloading new wheat into bins. The loading car is tilted to a 45 degree angle and the wheat pours out. The operation takes about a fourth of the time required by the old method. The U.S. is now shipping food to American fighting forces and their allies in 56 theaters of war. In 1943 we raised 50 percent more food on 2 percent less acreage with 10 percent less farm labor than in 1918.



Official U. S. Navy Photo

Helium inflated Blimps like this one patrol our coasts against submarines. The Bureau of Mines operates 5 helium plants producing 25 times the prewar output. Helium is also used for asthma, tuberculosis, caisson disease and in welding magnesium. The U. S. Government has a near monopoly of this gas. That's one thing the fascists didn't get. Reason? No free enterprise in helium. Get the point?



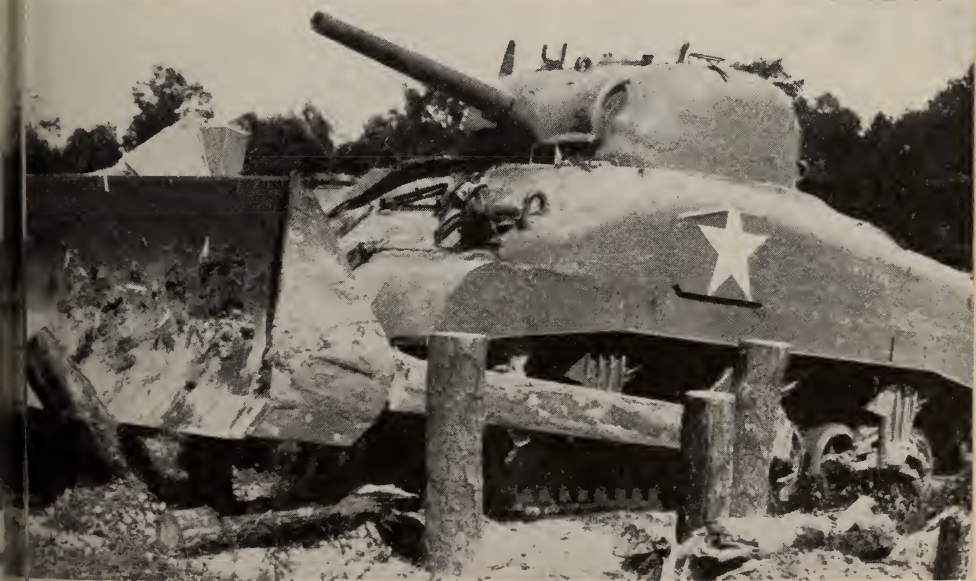
Official Photo U. S. Air Force

Rocket armament on a P-47 Thunderbolt being loaded with its projectile. Rockets have been used for war for hundreds of years. A British rocket attack in the war of 1812 routed American forces and led to the burning of the White House. Francis Scott Key was inspired to write the Star Spangled Banner by another British rocket assault on Fort McHenry.—rockets red glare, bombs bursting in a



Official Photo U. S. Air Forces

Army Engineers now erect this temporary steel span called a Bailey Bridge, named after Donald Bailey, an English engineer. It is made up of interchangeable parts held together by pins, lugs, bolts, clamps, and shackles. It's built on rollers, then pushed out over the gap and straddled into place. A 180 foot gap can be bridged in 7 hours. It will carry the heaviest traffic. Engineers to the rescue.



Official U. S. Army Photo

Now comes the Tankdozer, a medium Sherman mounted with a bulldozer blade. It combines unparalleled fire power with ability to move earth and great weight and momentum. It breaks through obstacles either by impact of brute force or by building ramps over them. The bulldozer blade assembly can be jettisoned in 10 seconds. Its work power is equal to a heavy tractor. What the heck's next?



Photo: Courtesy National Dairy Products Corpora

Home canning and gardening are all right, but you can't solve a mass technological food problem with the methods of feudal agrarianism. America's technology is going to run us out of scarcity soon and smack into abundance whether we like it or not. It requires Price System fascism to maintain scarcity in goods and services and to uphold oxcart ideologies. They're all un-American. 'Out, Damned Spies

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JANUARY

The Great Battle of Mug vs. Wump

Biggest Show On Earth!

by Roy M. Elliott

Now that the great political circus has played out its quadrennial stand on the American scene, we can pause to look backward and sum up. We all know what happened in front of the scenes through the efforts of the 'free press' which delights in magnifying inconsequential. We also know, to a large extent, what happened behind the scenes due to the efforts of keyhole columnists. But very few Americans know what didn't happen during our quadrennial circus. Why did only 60 percent of the eligible voters exercise their franchise? Perhaps it was because of what didn't happen. Here is the way one American citizen sized up the situation and why he didn't vote.

Song of The Siren

For several months before the late election, American citizens had the press, radio, pulpit, various news publications and magazines of all kinds fairly screaming at them to be sure to vote. 'Whatever you do, be SURE and go to the polls and vote! Regardless of whom you select, use your American Privilege, vote! Use your head, pick out your man, then vote for him! When you vote, you help keep our country democratic. The American Way of Life gives us all the right to vote,' etc., blah, blah, ad infinitum, ad nauseum.

Did it ever occur to you that it is possible to use your head and not vote? The current crop of politicians is no different from last year's crop, or, for that matter no different from those of grandpappy's day. They are still casting out the bait in the hope that with sufficient bait flung to the voters, sufficient fish will bite, so that

some one out of their political gang will be elected. I was not at the polls to assist this process by grabbing the bait.

Let's look deeper into this statement: 'Why I did not vote.' To begin with, we were cautioned to vote intelligently. *Time* Magazine asked the voters to 'think hard' and lend their support to 'keep the free enterprise system going.' Our local paper, in a three-quarter page ad, hurled the news at us of the opinion of a former New Dealer that he would not tax corporations just a little bit, but that he would remove all taxes, so that in some manner or other prosperity would filter down to all the little jobholders. All right, I did 'think hard' and used some of that intelligence so often mentioned but seldom used.

Oh! To Be A Daniel—

I am one American who knows exactly what he wants. Technocracy's

Victory Program of Total Conscription outlines a design of operation for the adequate solution of the many perplexing problems faced by all Americans today. I want to see a system of social control that will do these things, such as:

1. Halt minority group pressures on the Government.
2. Unite all Americans for one common objective.
3. Eliminate all types of war-time chiseling.
4. Oblige equality of sacrifice on the home front.
5. Liquidate pro-fascism in America.
6. Prevent the conscription of labor alone.
7. Reach our highest industrial efficiency for war.
8. Make the creation of further debt impossible.
9. Preserve America's dwindling natural resources.
10. Provide a high standard of living for all.
11. Install technological controls for technological war.
12. Underwrite the perilous post-war period ahead.
13. Guarantee the greater future of America.

This design is now called for by the trend of events, regardless of whether I vote or not, or how you vote, or how anybody votes.

Could I possibly have gotten any of these items by voting? Let's see. Take item No. 1. Did any of the candidates, either local or national, mention anything about eliminating minority group pressures on the Govern-

ment? If they did, it was whispered so softly that no one heard about it. The legislative halls of this entire nation are infested with individuals representing minority groups. Has any candidate stood out for installing a method of operation that will prevent such activity? We all know the answer to that question is NO.

Chisel or be Chiseled

Item No. 2 calls for uniting all Americans for one common objective. Who among America's political parasites stood forth on this platform? At present, the one common objective that all Americans are united on is 'everybody for himself, and the Devil take the hindmost.' By using an infinitesimal amount of 'intelligence' it is possible to observe that no candidate has gone down the line for item No. 2.

Item No. 3. Here is an important item. We can see plainly that there now exists in America all manner of wartime chiseling in such ways as WAR PROFITS, WAR WAGES, WAR PRICES, BLACK MARKET TAKE, RESTRICTIVE PREROGATIVES OF BUSINESS, LABOR OFFICIALDOM, and POLITICAL EXPEDIENCY. Where was my candidate for Item No. 3? I searched the entire political field for him, but arrived where I am now, empty-handed. How could I have voted intelligently in a case like this? Should I just have voted anyway, just to exercise my American privilege? Would that have been 'intelligent'?

Item No. 4. This item is a 'juicy' one. How many times have we all gathered for a Fourth of July celebra-

tion, years ago back in the old home town, and heard those valiant orators give the 'Address' of the day. Hear them tell how 'our forefathers fought and bled and died for freedom and democracy—so that we all could have *equality of opportunity* to chisel.' We sat solemnly as the speaker told us how 'we are all here today to celebrate this great day in our history and renew our pledge of allegiance to the flag that made us free,' etc., etc. The question here is, if we are to have 'equality of opportunity' flung at us from the old band stand, should we not also have 'equality of sacrifice'? I am in favor of it, but I could not find any politician that would take this stand and thus permit me to vote for him.

Fascism Is Where You Find It

Item No. 5. Here we have a very serious item. The charge that there is pro-fascism in America is so serious that to make such a charge without being certain of its validity would be less than intelligent. However, there has been so much pro-fascism evidenced in America that it is no longer 'under cover' for the man in the street and factual proof in abundance exists for any American voter who cares to investigate. Having made such an investigation, I am aware of the danger that pro-fascism presents to America, and I have looked around for a political candidate that would take his stand against this danger, in a manner that would liquidate such activities in America. No luck so far, however. I am beginning to wonder if

we 'voters' are ever going to have any choice in 'selecting' our 'man' to vote for.

Item No. 6 concerns conscription of labor. This item is one that should interest any voter not in the chiseler's class. It is not meant here that there are no chiseler's in labor's ranks, but rather I mean that class of citizens who are now classified as 'labor' for conscription purposes. If you are in that class, your opportunity for chiseling is removed if you are conscripted and you now go where you are ordered to go. For labor alone to be conscripted will be but to follow the pattern of the Axis Powers, and the Fascist Powers and their satellite countries. We must realize that a total war requires Total Conscription, not just a part, or just any part. In scanning the political lists for candidates willing to take their stand against labor conscription, I found not even one.

Business Before Pleasure

In considering Item No. 7, we have but to observe news items appearing in the daily press concerning various industries. Recently we endured the humiliation of having one of our leading copper companies found guilty of furnishing our Government, and a foreign allied government, with defective copper wire. We read of steel plates in ships cracking under strains and stresses considered normal. We see the shelves of merchants filled with progressively inferior grades of merchandise at top prices. New and unheard of brand names have ap-

peared of cheap and adulterated liquor. Canned goods have also suffered to some extent. While some of the items mentioned above have not been critical to the war effort, they do show a lack of industrial efficiency to an extent great enough to warrant and demand correction. There is other and more far-reaching evidence.

For instance, the Flying Wing Bomber, proposed by Technocracy, is so far advanced beyond anything in existence today that the manufacture of this bomber on a scale proposed by Technocracy would make every plane now being built in the U. S. obsolete. Obviously, this would cause loss of capital investment and profits to companies now making obsolescent models of various kinds. Also, it would spell finis to the naval equipment of the Allies as well as the Axis. When we understand how resistant 'free enterprise' is toward adopting anything that would make obsolescent any part of THEIR particular setup, we can understand why the Flying Wing has not been built. How could the highest industrial efficiency be secured when private companies are all primarily concerned with the profit angle? There has been no known example of any private company of major size furnishing the Government any war materiel at cost. If a profit cannot be made, Uncle Sam doesn't get the article, unless he makes it himself. Candidates in favor of Item No. 7 were scarcer than the proverbial hen's teeth, if not scarcer.

Now You See It, Now You Don't

Item No. 8 is interesting to exam-

ine. Who in America can take the stand that creation of debt is beneficial to our country? As we read of the mounting national debt, somewhere around 300 billions, we can project our attention into the not too distant future when this debt burden becomes due and payable. Are there any adult Americans who cannot remember how America countenanced a moratorium of World War I debts of foreign countries? With the devastation and destruction of World War II occurring on a scale so vast as to dwarf all previous war destruction, can the impoverished people of those foreign lands be expected to pay their lend-lease obligations? We must admit that the prospect for payment is extremely small. The American taxpayer will pay and pay and pay, up to the limit of his capacity to pay, but up to the present time there has been no person, agency or corporation that has pointed out how this debt can be paid and still maintain the standard of living that the technology of America has made possible. It would indeed be a brave, political candidate that would adopt this item as part of his platform. However, until some one does, I cannot intelligently vote on this issue.

Oh! The Years of This Land

In Item No. 9 we have a proposal that should interest every American citizen who possesses any degree of social vision whatsoever. The preservation of natural resources will guarantee the future citizens of America a life of bountiful supplies, in

contrast to the impoverished peoples who live in such countries as China and India. To continue the frightful and rapid rate of depletion of America's non-recurrent resources in the flaming holocaust of war is but to seal a future of scarcity and want. America, the land of opportunity, will become but an empty phrase, a mockery. The high idealism of America cannot be brought to fruition in a country depleted of its physical resources. We here in America feel a sympathy for the hungry people of the world, but we will not refrain from wearing wrist watches and driving automobiles because the 'poor heathen Chinees' cannot have these things to wear and use. A loin cloth and a bowl of rice may suffice for those peoples who choose voluntary poverty, with suitable philosophical solace, but my observation has failed to discover that happiness is based on poverty and want. The rich have been accused of having 'playboy' characteristics and it is quite likely that 'play' is in some degree connected with 'wealth.' While I am not interested in being a playboy, there is a happy medium somewhere between the two extremes which I would appreciate attaining, and as it is necessary to have physical resources to attain this objective, I am for preserving America's dwindling resources. From the standpoint of the exploiters of these resources, who in their efforts to make 'business' regardless of the effect such draining of resources will have on future generations, my stand is a selfish one. Why shouldn't they

be allowed to engage in chiseling, they say. Isn't this a 'free country'? Isn't this the 'American Way of Life'? These and similar questions have been raised in defense of the Price System method of exploitation and exchange of these resources.

When we witness the wanton destruction that total technological war is capable of creating, it is time to investigate ways and means of applying preventive measures. World War II has proven the greatest bonanza for those engaged in disposing of America's irreplaceable resources, and we have yet to hear any complaint, except that they are afraid they will run out of 'resources' before they have piled up enough millions. Where is the political candidate who will help me in my effort to save these dwindling resources? When he is found, he will get my vote.

Survival Of The Fittest

Item No. 10 is important. How can we expect to have a happy, healthy, harmonious, joyful populace if everybody does not have access to everything available to any one? Slums are quite unnecessary. Charity is as needless as a town cryer. Crime is a burdensome non-essential which will be dispensed with when we, as a nation, acquire some collective intelligence to supplant the 'rugged individualism' of the present day.

A prominent American once stated that this nation could not survive half slave and half free. The statement is still verifiable from many

sources. Perhaps the physical slaves of an earlier day have disappeared, but in their place has come the financial slave, the political slave, the industrial slave. The iron chains of those earlier slaves are no longer heard clanking throughout the land, but in their place has been planted a control just as real and more effective. Financial slavery needs no chains. Empty pockets force people to do many things that the scourge of the lash could not make them do. Political slavery makes men sell their self-respect and dignity for 'messes of potage.' Few slaves in real chains could be made to sink to the depths of hypocrisy, greed, and selfishness displayed by men who are slaves to a political system that fosters behavior patterns emulating the louse. Many instances are known where political slaves do not even have the tenacity of purpose of the louse, if we understand that the louse has but one objective, to live on the body without contributing anything. Of course, if the body dies, the louse will leave. A body louse will offer no resistance to the movement of the body, therein distinguishing itself from the political louse, in that the latter will offer interference and control of others who need to feed off the 'body politic' while he tries to grab it all for himself. A candidate that will espouse a high standard of living for all will certainly get my support. It would border on the moronic to support a 'lousy' candidate. Remember, we were told to 'vote intelligently.'

Function Is King

In looking over Item No. 11, we must understand something of the physical laboratory and the methods in use there. No scientist can get correct results when attempting to violate the laws of physics, regardless of how much he may 'desire' or 'hope' to do so. Imponderables, such as beliefs, opinions and hopes, are of no use in attaining the objective of a Boulder Dam. No part of the operation toward such an end can be left to chance. Fact, the dictator, is recognized and acknowledged.

When we realize that the intricate mechanisms of a technological war, such as America is now engaged in, cannot be designed and developed by persons not possessing technical skill and ability of the highest order, how can we expect political aspirants to know anything of problems of a technological nature? The problems of modern technological war cannot be solved by the methods of politicians, because political methods have not changed in at least 3500 years, while it requires constant alertness to keep up with the steady stream of new and constantly changing mechanisms of today (1944). When I find a 'ticket' composed of scientists, technologists, physicists, engineers, both civil and social, I will approach the polls, be recognized and registered, step inside and shut my eyes and pull the lever without as much as a glance as to who's who. I can do this because I will know that regardless of who I vote for, the offices will be filled with

capable men, for all scientific personnel speak the same language and know that facts only are of consequence. Because they do this, they will agree on things that have to be done simply because they *have* to be done, and for no other reason. The only question scientists are concerned with is 'Will it function'?

When Johnny Comes Marching Home

Item No. 12 concerns the postwar period, and from all observable data, unless something is done to prevent a repetition of conditions which occurred after World War I, we will witness a crisis of national scope which will be devastating in character. How can 'free enterprise' be expected to employ approximately 60 million workers? What action, if any, has been taken to prevent a ruinous depression after the war? Where will these millions of workers find employment in a world of cut-throat business competition, wherein one of the prime requisites for survival is reduction of man-hours to an irreducible minimum. It has been a vain search through the political candidates of all parties to find any that will stand forth for Item No 12. Consequently, I was forced to refrain from voting for any and all of them this time.

Item No. 13 rounds out a baker's dozen of the specifications that I, as a citizen and voter, am concerned about. Before the greater future of America can be guaranteed, there must be something definite in the way of a blueprint or plan that will ade-

quately handle the problems America is facing. Individual initiative may have been satisfactory in the days of hand tool manufacture and production, but those days are gone forever.

As long as the present slipshod, haphazard, stumblebum methods of Governmental control continue, we can expect just what we are witnessing. Confusion reigns supreme in such an economy. No candidate on any political party had the courage to state that social change is inevitable and that we must prepare for it, not fight it.

How can there be a greater future for America if no preparation is made for it? Where is the political party in America today that will even mention 'social change'? There may be individuals within political circles who are aware that all is not well in the political world, but what are they doing about it? With everyone trying to loot the house they are supposed to be protecting, it will be but a comparatively short time until the house will be empty. All persons interested in living in an empty house should proceed directly to the polls at election time and 'vote for their Man' so that the process can continue.

All persons interested in the 13 Items outlined in this article should investigate Technocracy's findings and affiliate themselves with the only Organization in America which is dedicated to the realization of those items.

Wake up, Americans, and act! Investigate Technocracy!

Primer of Technocracy

by Education Division 8741-1

Preceding articles in this series dealt with some of the elementary principles of Technocracy, the nature of science and the analysis of Technocracy. Neither this article nor the previous ones are complete treatments of the thesis dealt with but rather simple, introductory lessons.

Methods of Technocracy—Synthesis:

The synthesis of Technocracy, like that of science, interprets all inter-related factors in the analysis. Then, by deduction and induction, it yields those conclusions and social principles which make up the potential part of Technocracy, or its design. One might say that the design of Technocracy arises out of three facts. First, the positive evidence of the failure of non-scientific methods of social control, as disclosed by the analysis of the operations of the Price System we are now existing under. Second, the close affinity of social problems to the phenomena of the external physical world, and, third, the mensurability which derives from that affinity.

Since non-scientific methods have failed to solve America's problem, the design of Technocracy had to be based upon the physical laws of science. These facts determine the general structure of the New America and also dictate that the present im-

ported and superimposed social system must be scrapped. The design of Technocracy consists of a native, modernized American social system adequate to meet all the needs of all the people all the time. It will be constructed upon the geological resources and the geographical conformation of the North American Continent, together with the technological character of America's industrial system of production, and the best historical ideals of America.

This New America of Plenty will be a non-political, non-sectarian, non-price system of production and distribution, wherein social control will be of a technological character. Some of its principles are already in limited operation under the present system now. Since the Technate will be a non-price system, the use of money and the methods of pricing can be dispensed with. Money and prices are elastic commercial concepts for facilitating exchanges, and at the same time extracting profits in the process. The distribution of goods and services is an incidental by-product. In fact, full distribution is impossible under a Price System.

It might be well to note here that exchange is a commercial practice of scarcity, while distribution is a social function of abundance. Exchange is based upon the concept that value is the measure of the force of human desire. This is valid only under con-

ditions of scarcity. It constitutes the essence of the so-called law of supply and demand, wherein both are restricted, as is the case under a Price System, the first by enforced scarcity or restriction of the supply, and the second by enforced scarcity of purchasing power, which restricts the demand.

When abundance enters the picture, the myth of supply and demand collapses, and with it goes price, value, money, debt, and all the artificial concepts by which a Price System operates. It is only then that full production and distribution become possible and the real concept of function can arise.

These Price System concepts have outlived their usefulness. In fact, they have been rendered invalid by energy, technology and debt, and can no longer meet the requirements of social life. The historic role of valuation and exchange is now a destructive role; it restricts distribution. In the design of Technocracy, the distribution of goods and services will be effectuated by an instrumentality based on energy. Its characteristics are diametrically opposite to those of a medium of exchange. It will be a medium of distribution, pure and simple. Therefore, it will be non-interest bearing, non-cumulative, non-negotiable and non-transferable. The costs of production and distribution of articles will be determined by the total costs in units of energy consumed. This is the only unvarying non-profit, scientific method which can be used.

It will be noted that the principles illustrated here are in contradistinc-

tion to the operating characteristics of the Price System. This must be so because the design of Technocracy is a complete break with the age-old political, moral and philosophical methods of social control. The advance of science and the present superlative ability of man to harness the energy of Nature makes necessary a complete reconstruction of society. This must be in harmony with physical laws and the characteristics of the Power Age America is now in. If this reconstruction is not accomplished soon, civilization on the North American Continent will strangle to death in its own abundance of energy and technology.

During the long static age, man could welcome every addition to his ability to convert energy to his own uses. It increased his general welfare. However, in the last two generations, the rate of energy conversion and the advancement of technological processes have been racing upward with geometrical speed; while the general welfare has not kept pace. The latter is an effect of the former. The productive ability of modern industry has become tremendous, but the distributive mechanism incorporated in the imported, superimposed, social system, inherited from the age of scarcity, has remained static. That is why it must be scrapped, and a new over-all social-industrial system installed, which will be organized and coordinated according to functional instead of competitive principles.

This will not mean less freedom, but more. This concept which has existed in the minds of men as the

acme of things desired will be objectified and translated into living reality by having a physical foundation put under it. What good is hypothetical freedom without security? What good is abundance without distribution? What good is the shadow of Democracy without its substance? What good is a nebulous equality of birth without equality of opportunity? What good are the marvels of the Power Age without adequate purchasing power? And so on, down the long ghostly list of abstract ideals. Ninety-eight percent of the people of America sense the answers. For them

these things exist mainly in theory. They cannot be attained under the Price System, except for a high price, by a favored few.

This, then, is the design of Technocracy. It is further amplified in the literature. This design is the potential part of Technocracy. Potentiality, however, is not enough. Something else must be added. This leads us directly into the operational part of the Methods of Technocracy, which is the third and last step.

March-April Issue: Methods of Technocracy-Operations.

IT'S GREAT TO BE A PARASITE

"The American industrial worker had at his disposal at the close of the last war an average of $3\frac{1}{2}$ horsepower. Today it is $6\frac{1}{2}$. And this increase in power available has been of inestimable benefit. When we consider that a man, by his physical efforts, can supply only $1/10$ th of a horsepower, it follows that each industrial worker in the United States has available for production not only his own power—one-tenth of a horsepower—but also the power equivalent of 65 other men.

There are approximately 21,656,000 industrial workers in the United States, and they can supply by their physical efforts only 2,165,600 horsepower. This is significant, as compared with the power available to them. Since each worker has available $6\frac{1}{2}$ additional horsepower, the power available to all industrial workers is increased by that amount, or by the addition of the astounding total of 140,764,000 horsepower.

It would take 1,407,640,000 industrial workers to produce by their physical efforts this additional power.

Translated into other terms, this means that if we had enslaved 1,407,640,000 industrial workers—which is more than the

male population of the whole world—and had put them to work for us, the amount of horsepower available to us for production purposes would be no different than it is now. But we do not enslave peoples. Our inventors convert forces of nature into tireless mechanical slaves and render them available for the public benefit.

What other country can approach our achievement in production? With this tremendous power available, our factory output has reached an amazing peak.—Condor C. Henry, Assistant Commissioner of Patents, in an address delivered before the Pittsburgh Patent Law Association, January 20, 1943.

Dr. Morgan (Arthur Morgan, former TVA chairman), predicted nationalization of industry as soon as 'major part of our industrial life is in a few hands. Either the Government will take over big industry, or big industry will take over the Government.'—*Christian Science Monitor* 11/23/43.

Technology Marches On

There Is No Sanctuary

by Research Division 8741-1

Engines

An entire railroad is switching over from steam to diesel operation. The New York, Ontario and Western Railway will sell or scrap its present 89 steam locomotives and replace them with 37 diesels. This railroad handles mostly freight. The 37 diesel locomotives have a combined horse-power of 74,250. (*Diesel Power*, September 1944)

The handicapping weight factor in diesel engines is being reduced by means of supercharging. Horsepower has been increased from 30 to 50 percent with no increase in weight or space. Cast aluminum and other light metals are being used. Here is an example of the old and the new method of making a crankshaft for a large eight cylinder diesel.

The old way, and one still in more or less general use is to take a 36,000 pound steel ingot and laboriously remove two-thirds of the metal by machining, sawing, chipping, drilling, turning and boring to get the finished 12,000 pound shaft. Time, expensive machines and *skilled man-hours* are required this way. The same shaft, cast of Mechanite metal to size and shape although requiring advanced foundry knowledge and technique, requires negligible machining and handling, and the final cost is much

lower. (News Release of the Cooper Bessemer Corporation, June 1, 1944.)

Engineering

The Colorado-Big Thompson project includes a 13 mile long irrigation tunnel under the Continental Divide. It will bring water from the western slope of the Rockies to the eastern side to help irrigate 615,000 acres of land in north-eastern Colorado. Surveys were carried over the main range of the Rockies. Triangulation stations had to be established on some of the highest peaks. The terrain was so difficult that only one such point could be reached by horseback, the rest requiring laborious packing by manpower. The two bores of the 13 mile tunnel were holed through on June 10, 1944. A final checkup shows that the alignment of the two sections of the tunnel coincided within 7/16ths of an inch, and the tunnel grades met within 3/4ths of an inch. (Department of The Interior Release, August 21, 1944.)

Military

The Army is using a bouncing box to deliver certain supplies to beleaguered troops. It can be dropped 10,000 feet and bounces as high as 30 feet on the first bounce. Eggs, medicine and liquids in glass containers can be delivered *without* breakage. The secret is an ingenious binding of

wire of a certain alloy at a certain tension around an ordinary packing box. This gives it a resiliency that no rubber possesses. The whole device is an almost perfect shock absorber. Parachutes cost the government \$27.50. The bouncing wire box costs \$2.75. (Editorial in *Chicago Daily News*, June 29, 1944.)

The Willow Run plant is producing approximately 100 Liberators a week, or one bomber every hour. Six thousand had rolled off the line up to the early part of August, 1944. (*Chicago Daily News*, August 13, 1944.)

The A.A.F. Technical Service Command, in August 1944 announced procurement of a new piece of life saving equipment. It is an 11 pocket, 10 pound flight vest, worn over the flying suit and under the chute pack of aviation personnel. The 11 pockets contain the following equipment to aid stranded flyers: rations for three weeks, cooking equipment, fire starting kit, fishing lines and hooks, knives, gloves, first aid materials and medicines, sun goggles, mosquito netting, manuals on desert, arctic and ocean survival, rescue flare signals and a 45 calibre pistol with 20 rounds of bird shot for fowl and small game. Some vest! (*Chicago Daily News*, August 13, 1944.)

Metals

Twenty aluminum box cars, made of the new extra-strength alloy R-301, have gone into service on mid-western railroads. Each car weighs 10,000 pounds less than the box cars now in

service. Five of them are equipped with roller bearings and all of them have regular passenger braking equipment. They are designed for operation with passenger trains. Their lighter weight lowers the center of gravity, thus enabling their operation at high speed. (Reynolds Metals Company Release, October 2, 1944.)

New Technology

An electric retarding device installed on 5400 horsepower diesel freight locomotives is relegating air brakes to a secondary position in controlling train speeds. The retarder will slow a 125 car freight train down to below 10 miles per hour. The retarding device is accessory equipment. It converts the driving motors into electric generators. It works something like the second gear in an automobile. Power created by the generators is dissipated by conversion into heat in resistor bars placed in the car ceiling. The retarder avoids use of the air brakes except for complete stopping. It reduces severe wear and tear on brake shoes, wheels and other rigging involved in slowing down heavy freight trains. It is said to result in pulling out fewer drawbars and breaking fewer trains as a result of air brake failure. (*Chicago Sun*, August 20, 1944.)

The American Rolling Mill Company has equipment capable of turning out foil-like sheets of steel 2/1,000th of an inch thick. It is used in radar equipment. (*Newsweek*, October 23, 1944.)

Agro-Technology

The Ohio State University's research laboratory has developed a method of exploding the skins off fruits and vegetables. The method eliminates tedious and costly man-hours of labor and wasted usable material. It's done like this. The products to be skinned, apples, potatoes, beans, etc., are put into a high pressure container equipped with temperature and pressure gauges. Steam at a pressure of 240 to 250 degrees Fahrenheit is forced into the container. This causes an expansion of water under the skins of the product. The temperature and pressure is held steady for a few minutes. Then cold water is suddenly introduced into the container creating a vacuum on the outside of the food. The skins explode and the product is ready for immediate freezing or dehydration. (*Chicago Sun*, October 30th, 1944.)

Each year the U.S. used to import 160,000 tons of cork. Four years ago the U.S. Forest Service began a nation-wide cork planting project. Hundreds of thousands of cork oak trees have been planted in 18 states. It requires from 10 to 15 years for a cork tree to reach maturity so that its bark can be ripped for commercial use. There are 4,000 mature trees, from 60 to 80 years old in California. The first harvest there was carried out in July 1944. Cork is used for insulation, for bottle stoppers, caps and liners, for polishing wheels, gaskets, cartridge plugs, bombparts, life preservers, sweat preventers in subma-

rines and in motor vehicles. (*Chicago Sun*, August 21, 1944.)

This fall the Delta Country of northern Mississippi witnessed a far-reaching development in southern agricultural economy. A 28 acre field of cotton was plowed, planted, cultivated and harvested entirely by machines. It happened on the 5000 acre Hopson Brothers' plantation south of Clarksdale. The cotton land was plowed with the regular tractors and then planted with a mechanical seeder. The field was cultivated six times during the growing season with miniature flame throwers. Mounted on machinery, these moved down the rows blasting the weed growth. The tough, barklike stems of the cotton plants were not injured by the flames. A week before the harvest, the leaves were removed from the plants by airplanes. Flying low over the fields the planes dusted the cotton with a formula which causes the leaves to drop off in a few days but not affecting the cotton bolls. Finally, the crop was picked by machines, which averaged three-fourths of an acre per hour. (*Chicago Tribune*, October 11, 1944.)

Plastics

A new flexible plastic, having a texture similar to human skin and a like-life translucency, has been developed by Stanley D. Tylman, D.D.S., professor of dentistry at the University of Illinois Dental College. The new plastic can be permanently colored to blend with individual coloring and finished so finely that its un-

ion with living tissue is unrecognizable. It will be used to restore the features of wounded servicemen and accident victims. (*Chicago Sun*, August 9, 1944.)

Fuels

Telescoping into a few hours what nature takes millions of years to do, a cheap, quick way has been found to make oil in unlimited quantities. This was announced by Dr. Ernest Berl, research professor at Carnegie Institute of Technology at the Annual Meeting of the American Chemical Society in the Sherman Hotel, Chicago, April 3, 1944. The process involves the manufacture from carbohydrate plants of a 'proto-product,' by means of carefully controlled internal combustion to remove the oxygen. Then, by hydrogenation this can be converted into gasoline and oil. Almost any carbohydrate plant, such as wood, sugar cane, potatoes corn-stalks, leaves and seaweed, can be used. One hundred long tons of sugar cane will yield 2,500 gallons of gasoline, 3,000 gallons of middle oil, and 1,000 gallons of lubricating oil as a by-product, in addition to the 8 tons or so of raw cane sugar. (*Chicago Daily News*, April 3, 1944.) *Editor's Note:* We won't have to worry about getting this under the Price System.

Man-Hours Per Unit

In 1939 it took almost 25 man-hours to produce one Garand rifle; now it takes only five. In 1942 one government plant used 3,000 employees to turn out 1,000,000 30-calibre cartridges a day. In January

1944 this labor force had been reduced by half and only 1,500 workers turned out the same amount of work. (*Science Digest*, October, 1944.)

A Liberator bomber contains about 300,000 rivets. These used to be flattened out one by one. Under the old system, a riveter, operating an air hammer and a buckler up, could set from two to four rivets a minute. Then came the explosive rivet. The riveting hammer is a heat conducting device. It transmits heat to the hollow shank end of the rivet. This sets off the explosive charge which blows the edges of the rivet outward in a barrel-shaped bulge. This is fully as effective in holding as the old time closure obtained by the air-hammer-bucking up system. Only one operator is required, and he can set from 15 to 20 rivets a minute. (*The Carpenter*, May 1944.)

In 1942 the Johns-Manville Corporation filled out 27,198 government reports and questionnaires. In 1943 the number of such papers had increased to 71,588. In 1942 it required 132,560 man-hours of white collar labor to do the job. In spite of a 250 percent increase in the number of papers to be filled out, the job was done in 1943 with only 97,452 man-hours. This sums up to a 250 percent increase in output by a 1/3rd smaller labor force. That's good going. (*Chicago Daily News*, October 25, 1944.)

One ton of coal makes about eight barrel of gasoline.

Technocracy and Your Trade

The Oil Worker

by Organization Division 8741-1

Oil For The Engines of America

Production and refining of petroleum has been increasing almost steadily in the U. S. since 1861. Every year saw more oil produced and refined than the year before. The best pre-depression year was in 1929 when about 1,000,000,000 barrels were produced. In 1940 the oil industry produced more than 1,350,000,000 barrels.

As some of us may remember, 1929 was the year when the Price System Humpty Dumpty fell off the wall. Since then the bright boys of 'free enterprise,' who have been riding the crest of a wave of physical expansion in America for five generations, have been trying to put Humpty Dumpty together again.

After technology delivered its haymaker in the fall of 1929 petroleum production declined for the first time since 1861. It dropped off from the peak production of 1,000,000,000 barrels in 1929 to 785,000,000 barrels in 1932. Then the petroleum industry, along with all the rest of 'free enterprise' in America jumped on the bandwagon of government spending. If you glance at a chart of government spending and industrial production since 1932, you will notice a peculiar thing. The curve of industrial production follows the curve of government spending, up and down through the 1930's.

The Seventh Edition of *Petroleum Facts and Figures* for 1941 gives a record of employment in petroleum production, by index numbers, from 1931 to 1940. According to this index 1929 equals 100. The source quoted is the Bureau of Labor Statistics. The index of employment declined with the crash of 1929, for we observe on their chart that it is only 65.7 percent of that level in 1931 and dropped to 55.3 percent in 1932. This is the year that petroleum production reached its low point. Now we observe a strange phenomenon, i.e., strange for those who don't understand America's physical history.

Petroleum production climbed out of the 1932 doldrums and began rising to new peaks, with the blessing of government spending. But, did employment climb also? Ah! Mr. Oil Worker, you have another guess coming. Petroleum production reached over 1,350,000,000 barrels in 1940, but the index of employment rose only from the 1932 basement of 55.3 percent of 1929 to a dismal low of 62.8 percent in 1940. In simpler words, the petroleum industry produced over 350,000,000 barrels more oil in 1940 than in 1929 with 37.2 percent LESS workers.

Since 1940 oil production has been rising till in 1943 it reached over 1,500,000,000 barrels. Yet a Bureau of Labor Statistics' index of oil production employment, based on 1939

as being 100 percent, declined to 81.7 percent for 1943. The same source reveals that output per wage earner in petroleum production rose from a calculated level of 100 percent in 1939 to 148.6 percent in 1943. That is why the index of total employment declined.

Which House Is Labor's?

What is the picture in the refining end of petroleum?

In 1925 the U. S. refined over 698,000,000 barrels of domestic oil; besides the imported oil which we won't even count here. In 1940 the oil industry refined more than 1,250,000,000 barrels. The reason we use 1925 as a comparative year here is because *Petroleum Facts and Figures* uses that year as a point from which to calculate employment in refining. In their index 1923-25 equals 100. This index was derived from the Bureau of Labor Statistics.

From here on the story is short and sweet. In 1940 the index of employment had risen to 121.6 percent of the 1923-25 period. But what were those production figures again? Subtract the 1925 refining figure from the 1940 figure and we see that over 550,000,000 more barrels of oil were refined in 1940 than in 1925. In simpler terms, the oil industry refined almost twice as much oil with ONLY 21.6 percent more workers.

Since 1940 the amount of oil refined has been rising till in 1943 it reached almost 1,500,000,000 barrels. But the Bureau of Labor Statistics' index of employment, based on 1923-

25 as being 100 percent, had dropped off to 110.6 percent in 1943. In simpler terms, we refined about 250,000,000 more barrels of oil in 1943 than in 1940 with an 11 percent DECREASE in workers. The peak of employment in refining was reached in 1937 when the index stood at 128.3 percent of 1923-25.

The answer to this riddle is typically American. The only way to produce more is to work less. In simple words, if you want to produce more and produce it more cheaply, you give the green light to technology and energy; and a kick in the pants to the workers. It can't be done any other way. America is in the Power Age now. If you want to compete and stay in business, the installation of ever more technology is an absolute MUST. Here is what is doing it.

Energy and Technology

In 1919 the total installed horsepower of prime moving engines, making the initial conversion of energy into work, in the oil fields was 1,770,000. By 1939 (20 years) this had increased more than 100 percent to 3,715,000. Secondary moving electric motors, turning converted energy into work, in 1919 totaled 79,000 horsepower. By 1939 this figure had increased 700 percent to 541,000 horsepower.

In refining, the story is about the same. In 1919 the total installed horsepower of prime movers and electric motors in refineries was 239,000 horsepower. By 1939 (20 years) this had increased more than 1,000 per

ent to 2,435,000 horsepower. Total installation of extraneous energy in production and refining in 1939 was 1,691,000 horsepower. This is equivalent to the labor power of 66,910,000 men. So much for energy. How about Technology?

In the first issue of *California Oil World*, for October 1944, there is an account of the role of the Richfield Oil Corporation in 100-octane production. The following quotation tells the story:

The history of Richfield spans three decades (30 years) and three refineries. Each took full advantage of the refining technology of the day and was at the time of construction the last word in efficiency. Yet each has been made obsolete by new developments and technical advances in the science and technology of refining.

Standard Oil Company of New Jersey recently put into operation a fluid, catalytic, cracking plant for the production of 100-octane gasoline at Linden, New Jersey. The installation consists of a maze of furnaces, pipes, tubes and oilers and is 20 stories

In 1943, 707,800 British miners in England produced only 194,493,000 tons of coal. In 1943, 401,000 American miners produced 589,000,000 tons of bituminous coal. (Editorial in *Chicago Daily News*, August 9, 1944.)

'America faces "bloodshed and rioting, starvation and misery, and a disruption of

high. The entire operation is controlled from a central room where more than 170 heaters, gauges, dials, etc. permit rigid control. The plant employs *ONLY* 9 men. Ralph W. Gallagher, President, says that the Linden plant is the third such unit to go into operation since America went to war. He asserted that 30 more like it were under construction, or planned.

From this we see the advance of energy and technology in refining. The same trend is at work in the production of oil. ALL this is a part of the major trend of physical events in America as a whole. The entire process is unidirectional and irreversible. As long as the Price System lasts, this trend is bound to react adversely on the general welfare of the people as a whole, and of minority groups directly affected. The only solution to this problem is to give the green light to technology in the social field as well as in the industrial field. The problem of the oil worker is bound up with the number one problem of America in its entirety.

Investigate Technocracy!

our economy" unless the conversion of industry from war to peace is properly planned.' So stated the Postwar Planning Committee of the American Federation of Labor, pointing out that some 30,000,000 persons in industry and the armed forces would have to make shifts in or out of the labor market. 'With their families, that means half the population of the country will be directly affected and the rest indirectly.' As reported in *Labor*, April 15, 1944.

In the Question Box

by Public Speakers Division 8741-1

Why doesn't Technocracy advocate use of the so-called 'emotional appeal' in its meetings?

E. D. W.

Technocracy meetings are never held to entertain the public. Technocracy seeks to educate. The main purpose of Technocracy meetings is to obtain capable, new members to help build the New America. This purpose requires a type of citizen who has been convinced by the unvarnished facts. The emotional appeal would defeat this purpose, as it would attract an unstable element of functional incompetents into the Organization. Back behind it all is the primary fact that America's social problem today is neither a political, moral or emotional problem. It is a technical problem. To get this idea over to an audience it is necessary that major emphasis be placed on the social implications of the impact of technology and energy. A sober, relentless presentation of valid reasoning from unassailable facts, avoiding both the academic and emotional approach, has been found to be the most effective form of address.

Why don't we read more about Technocracy in the newspapers?

G. H. N.

It appears that you are laboring under the delusion that the so-called newspapers of today are NEWS PAPERS. As a matter of fact, there is a large body of debunking literature on the shelves of any good pub-

lic library which has punctured this preposterous claim repeatedly. News gathering associations and news publishers today usually suppress more stories of events than they print. Besides this, they color what is printed to suit their own prejudices and to conform with the interests of their advertising angels.

The 'Freedom of the Press' about which they clamor constantly is merely the freedom to continue in this type of anti-social activity without hindrance by any social controls. The great days of the Fourth Estate are in the past. The courageous publishers, and the great editors, have long since gone to their reward. Today's crop of lickspittle element in the publishing field have become an immensely wealthy vested interest in their own right. Can you expect them to violate the Rules of the Game of their own system? Technocracy is a complete break with the entire Price System. Knowing that, can you expect any Price System vested interest to publicize Technocracy? No Price System publication dares to challenge Technocracy either. Too many smart alecks have had their fingers burned in the attempt. Some day these chickens will come home to roost in the newspaper offices of this great land. Then America will have real NEWS PAPERS. In the meantime, you can help to spread Technocracy's body of thought by helping to spread the distribution and sale of its literature.

In the event of Total Conscription being installed, wouldn't most people object to being cut down to Army pay after receiving high wages in war industries?

E. A. W.

Instead of being 'cut down' to Army pay, most people in America would be 'raised' to Army pay. The minimum amount any one could possibly receive would be \$50 a month clear, above all living expenses. There would be no deductions for rent, interest, taxes, profits or war bonds. Medical and dental attention would be included as part of the pay. Food, too, would food, clothing, housing and transportation. Pay would range from \$50 a month clear to \$800 a month. Skilled personnel would receive pay above the basic minimum commensurate with the scales of pay prevailing in the Army.

How many people in America receive enough pay to be able to have \$50 clear every month? The U. S. Government and many private agencies have long estimated that a family of four needed \$2,500 a year to maintain a minimum standard of health and decency. In 1935 and 1936, the National Resources Committee calculated that 71 percent of U.S. families received less than \$2,500. In 1942, the Division of Research of the OPA estimated that two-thirds of U. S. families were still receiving less than \$2,500 a year.

How much is \$50 a month in cash, plus complete health protection, plus adequate housing, plus plenty of good

food, plus transportation, plus plenty of good clothing, plus all the necessary appurtenances of living as a civilized American can live in the Power Age?

They can promote this writer to that status anytime they want to.

Who, or what, is the founder, or foundation of Technocracy?

C. W. W.

Information about the founder of Technocracy will be found on the inside back cover of every issue of *GREAT LAKES TECHNOCRAT*.

The foundation of Technocracy is something else. This rests on the law of energy determinants and the application of the methods of science to the solution of problems of the social order. Briefly stated, the law of energy determinants relates the fundamental role of energy throughout nature to human social problems. It states that energy is basic in all life. It states further that all organic and inorganic things (men, animals, machines, buildings, etc.) included in the construction and operation of any social system consume, or have consumed, energy in their construction, operation and maintenance. Therefore, energy is prior to capital and labor and independent of both. Even the worker must ingest energy before he can labor. With this in view, we have a basic yardstick for measuring most social problems; since these are problems of production and distribution of physical goods and services, i.e., problems associated with energy consuming devices. The fact that energy can be

measured and the principles of physical science applied to its use greatly simplifies the social problem. The law of energy determinants makes possible a new and scientific approach to social problems.

The application of the methods of science to social problems furnishes the technique for solving our social problems. Since remote times, social problems have always been tackled by the methods of philosophy. This was perfectly valid in the pre-scientific era. Technocracy has no quarrel with the past. But, since the rise of scientific knowledge and the debut of the industrial revolution, the methods of philosophy have become obsolete. The concepts of philosophy are arrived at by reason, logic and discussion. This sounds important, but isn't. Reason, logic and discussion belong in the field of metaphysics; they are sterile of any social meaning in the Power Age. The concepts of Science arise out of observation, re-

search and experiment. That is what is meant by the methods of science. It is to the application of these methods that we owe our great industrial structure of today. The reason we have reached a social impasse today is because the methods of philosophy which are inherent in the superstructure of corporate enterprise, ecclesiasticism and the political state, are in conflict with the methods of science. The application of physical laws of science has created our modern American social problem; but the restrictions of the methods of philosophy prevents their solution. Therefore, since we can't go back to the pre-scientific era, we must make a full application of science to society. The king is dead; long live the king.

This is only the skimpiest of outlines on this question. For a more complete explanation, read *Science v Chaos* and *Introduction to Technocracy* by Howard Scott and others.

OUR REAL HISTORY IS PHYSICAL

Just one hundred years ago a Government surveyor discovered in northern U.S. a deposit of ore which, since 1844, has produced more metal than any other deposit in the world. Iron was discovered in the Lake Superior region in 1844, and if it were not for *that fact*, along with the discovery just 85 years ago in August of oil in Pennsylvania, North America would have hardly more people or living standards any higher today than we had in those years before the Civil War. It is those discoveries we should celebrate, for without them all the political and philosophical documents ever drawn up could not have made us the greatest nation on earth. Yet

the only public celebration given the discovery of oil in 1859 was the naming of tanker this year after Soubarissen, the Indian Chief who told the first white man about oil. And as for iron, which makes steel, without which we would have no railroads, no ships, no automobiles, no engines of any kind, no electricity, no public notice at all was given or paid the 100th anniversary of its discovery.

'I sell here, Sir, what all the world desires to have: POWER!'—Matthew Boulton.

Voice of the Price System

Did They Say That?

by Publications Division 8741-1

If the proposed Wagner-Murray bill were to pass in its present form, it would be the same thing as passing a law which would brand every new-born babe, property of the Federal government.

Clarence A. Jackson, vice-president of the Indiana State Chamber of Commerce, at the 1944 meeting of the Controllers Institute of America, held at the Stevens Hotel, Chicago, October 2, 1944. (As reported in the *Chicago Sun*, October 3, 1944.)

Of all the social virtues the least neglected, the most useful, the easiest to practice and the love-liest is lying . . . and one should learn early to lie and let's lie.

Clare Booth Luce in an article in *Vanity Fair*, quoted by Senator Claude L. Pepper (Dem. Fla.) in an address at the Chicago Stadium, October 22, 1944. (As reported in a story by John Pickering in the *Chicago Sun*, October 23, 1944.)

Question: Under free economy, how do you propose to take care of the slum areas?

Answer: You are worrying about something that doesn't need to be worried about. If the people living in slums don't like them, let them move out. Some people like to live in one room shacks. There is no solution to

this problem. Certainly industry doesn't intend to attempt the impossible.

John W. Scoville, economist of the Chrysler Corporation, during the question and answer period at a conference on postwar problems sponsored by the National Association of Manufacturers, the Michigan Manufacturers Association, the Detroit Board of Commerce and the Employer's Association of Detroit. (As reported in *The Nation*, Oct. 28, 1944.)

Now we must soon resume our old task of making democracy safe for the world.

From the *Fortnightly Letter* of the Connecticut Economic Council, looking forward to the end of the war. (As reported in *The Nation*, October 28, 1944.)

I know of no more dangerous proposal that could come before the House in these days of war hysteria than this plan to prepare the harbor of Guam for an airbase.

Congressman Ralph Church (Rep. Ill.) during debate in the House of Representatives February 21, 1939, on a proposed defense measure to improve the fortifications of Guam. (As reported in *The Railroad Trainman*, November 1944.)

We should go forth on Novem-

ber 7 marching to the music of the Union with the flag of liberty flying in our faces and the love of God in our hearts and vote the Republican ticket straight for God and country.

John F. Tyrell, Chairman of the Republican State Central Committee of Illinois, in an October 1944 pre-election speech. (As reported by Robert Lasch in a story in the *Chicago Sun*, October 30, 1944.)

I'm happy to see my old friend Joe Pew here. He always takes care of his friends in election year. There's more than one way to skin a cat. And if Joe doesn't take care of me, I'm sure that some of his relatives will.

U. S. Congressman Dewey Short (Rep., Mo.) during a speech in October before the meeting of the Pennsylvania State Republican Committee at Pittsburgh, Pennsylvania. (As reported in a story by Charles O. Gridley concerning the political benefactions of the multi-millionaire Pew family, owners of the Sun Oil Co. and the Sun Shipbuilding Co., in the *Chicago Sun* (not owned by the Pew Family) on October 31, 1944.)

Our first duty to the public school is not to pay taxes for its maintenance.

Jesuit Father Paul L. Blakely on page 5 of his pamphlet '*May An America Oppose The Public School.*'

OY! OY! WHAT A SITUATION!

'New York, Aug. 15—(AP)—War has taken the pawnbroker from under the three gold balls and placed him right behind the eight-ball. He has plenty of money but no one to lend it to. And pledges have fallen off from 25 to 40 percent since Pearl Harbor, says David Cohn, president of the Pawnbrokers Assn. of New York. Many of his former customers are in service. Many other former pawners don't need money—they're making plenty in war jobs. And even if they do come in for an emergency loan, *they're back in no time to redeem their hocked property. The shorter the loaning time, the less money the broker makes in interest.*'—*Chicago Daily News*, August 15, 1944.

Ed. note—This sad state of affairs is similar to that of the banks in the U.S.A. In 1940 the Federal Reserve member banks of the country had \$33 billions in demand deposits, and of their total loans \$7 billions were in private business while \$12 billions were invested in U. S. Government

bonds. Today the picture is changed, and the banker is behind the eight-ball too. On Sept. 2 this year demand deposits have risen to \$35 billions, but private loans were down to \$6 billions and the banks have \$41½ billions invested in Government bonds, on which the interest rate is below 2 percent!

More than 1000 persons have been convicted of vote frauds in the last four years in Chicago. This figure was announced by Guy E. Reed, Chairman of the Joint Civic Committee in the *Chicago Daily News* July 9, 1943.

'The Race Problem, when you boil it down, has a strong stench of the dollar' Howard Vincent O'Brien in his column 'All Things Considered' in *Chicago Daily News*.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association other than North America or elsewhere.

★ The basic unit of Technocracy is the Chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.01 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient genetic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to send many miles to discuss Technocracy's Visionary Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1916/1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally held the lid on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

Great Lakes Technocrat,
304 W. Randolph Street,
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ARABIAN PROVERB

He who knows not and knows not
That he knows not, is a fool.

Shun him!

He who knows not and knows that
He knows not, is simple.

Teach him!

He who knows and knows not that
He knows, is asleep.

Wake him!

He who knows and knows that
He knows, is wise.

Follow him!

GREAT LAKES TECHNOCRAT

25c

Volume III

Number 3

25c

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MARCH-APRIL-MAY, 1945

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WHOLE NO. 72



Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspect of Science; and Presenting the Specifications for Total Victory in America's War Against Fascism.



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TECHNOCRACY DIGEST

625 W. Pender Street

Vancouver, B. C., Canada

Peace, Will It Be Wonderful?

60,000,000 Horse Feathers

by Alice Langan

It is time for all Americans to realize that what most Americans are interested in is more goods and services and better goods and services. It is time for us to realize that this is the freedom we are fighting for. It is time for us to realize that we are fighting to keep out a system of operating where production is frozen at a level of scarcity in order to maintain the status quo, for the benefit of the few at the top at the expense of the many at the bottom.

If you are one of those who cling blindly to the faiths, beliefs and traditions of your ancestors, and ignore the future of your children and your children's children, you will not do anything about obtaining your birthright.

But if you are of **THAT** company which seeks the facts, and having measured those facts, accept them, you cannot do otherwise than to reach out for that **FREEDOM** which can be yours!

Don't Count Noses, Count Facts

One hundred and fifty years ago, or less, 98 percent of all the work done on this Continent was performed by human toil and hand tool methods, and only 2 percent was performed by the use of extraneous energy. Men and women toiled from dawn to dusk, and died young. To have opinions then about the method of doing work didn't interfere with operations much. Today, we have reversed that method of doing work, for only 2 percent, or less, of the work done is performed by human toil and hand tool methods, and 98 percent is done by extraneous energy. That 2 percent of human toil is accessory or attendant to the machine. To have opinions today about how to operate this complex technological equipment simply

interferes with its operation. On this Continent we no longer have any right to determine as a matter of opinion that which can be determined as a matter of fact.

Disemployment of human labor is a universal symptom of the introduction of technology. *Disemployment* is not to be confused with *unemployment*, for while unemployment indicates that the condition may at some time be alleviated, disemployment of human labor by the introduction of technology is a permanent thing. Human labor displaced by technology is never again needed in the particular field where that technology is introduced.

Ever since World War I, this displacement of human labor has been going on at a rapid rate, and today in this Total War we have witnessed

a tremendous acceleration of that trend, that displacement of man-hours by the installation of more and more technology.

End of the Line—All Off!

There are all kinds of examples of the displacement of man-hours of labor; just look around you; your own factory; even your own home. See how much more efficient work is performed by better machinery, better technology, automatic equipment, with less and less human beings employed.

The accelerated trend toward greater and greater displacement of man-hours, first observed at the end of World War I can best be understood by a few examples.

In 1918 the railroads, with 2,000,000 workers, hauled 405,000,000,000 ton-miles of freight. In 1943, 1,000,000 *LESS* workers hauled almost twice as much freight. One million workers had been permanently displaced by the introduction of new technology. That is the only way to produce more ton-miles of freight.

The United Mine Workers of America at a Convention in Cincinnati, September 17, 1944, viewed with apprehension the mechanization of mines and the consequent job shrinkage, with the reduced need for miners occurring at an alarming rate. In 1943, approximately ten million *more* tons of bituminous coal was produced with one-third *less* miners than were employed in 1918. That is the only way to produce more coal.

On the farms of America, more

than two million less workers are employed today than when the war began in 1941; yet food production in 1943 was 15 percent above 1942; and the overall production of farm products increased 38 percent above 1939. That is the only way to produce more food.

Canada, in five years of war, has stepped up her productive capacity to an extent that would have required 50 years under normal Price System operation. Shipshaw alone, in five weeks of full-load operation, can produce all the aluminum Canada consumed in an entire year prior to 1939.

More tools have been built in these years of war, 1941 through 1944, than were built in the preceding 40 years. It has been stated by business economists that by 1946 only 83 people will be required to turn out as much as 100 persons did in 1940. In other words, 17 out of every 100 people are permanently displaced, due to technology introduced since 1940 alone. You figure it out. Our total labor force now is approximately 58,000,000. Seventeen out of every 100 now employed will never again be needed in the production of goods now being made.

Isn't this what we have striven for all along, this reduction in human toil? Is this bad? From the purely physical point of view of the health of the human components involved, reducing human toil is wonderful. It is also tragic for them under the operations of a Price System of trade and commerce. For, in such a system

you and I must be able to exchange our man-hours of labor for purchasing power.

World War I on the European Continent ended for those Americans engaged in it there; but ever since the end of that war, Americans on this Continent have been engaged in a continual battle against abundance, in a continuous war to maintain a Price System, in a continuous struggle *not* to achieve America's destiny, which destiny is to be achieved only in obedience to the technological trends on this Continent. We have been battling for the life of the Price System ever since 1919 and have constantly had to administer more blood transfusions, such as installment buying, foreign loans and pump priming.

Brother, Can You Spare a Token?

We would like to illustrate to the great majority dependent upon selling our man-hours of labor in exchange for purchasing power under the Price System how very little that system has offered us of America's great productive capacity in the recent past. Also, how little most of us get even in the wartime 'boom' and how utterly hopeless it will be for the Price System to solve America's social problems and still remain a Price System.

The Price System has been able to provide but a mere pittance of purchasing power to most of us. In 1936, 33 $\frac{1}{3}$ percent of all American families earned less than \$780 per year; 50 percent got less than \$1,070

per year; 66 $\frac{2}{3}$ percent less than \$1,450 per year; and 89 percent less than \$2,500. Only one percent of all American families managed to earn anything above \$10,000 per year. Eight million families in 1936 continually faced starvation; eleven million continually fought poverty.

We're very sure that now while there's a war on conditions are better for most of us. Are they? The Bureau of Labor Statistics maintains that an income of \$1,740 per year is the minimum subsistence budget for a family of four; but 18 million families in 1943 lived on less than that. The University of California disagrees with that minimum subsistence and insists that four people need \$2,645 per year; but there were 25 million families who earned less than that in 1943.

Manpower, like other commodities, has not been one of scarcity on this Continent, but of abundance. As late as January 8, 1945, Secretary of Labor Frances Perkins stated that the labor supply was ample; the only problem being how to get workers where they are needed. For 26 years the problem of labor has been WHAT to do with it; how to employ it in private enterprise, and how in heaven's name to pay it enough to buy back the products of modern technology.

The Late Unpleasantness

We saw what happened to purchasing power in the 'late' depression, but do we remember? Only twelve years ago, 20,000,000 Americans were

unemployed. Only a little over four years ago, 1940, 8,500,000 were still unemployed. In 1933 goods, produced by technological methods, were piled high on the shelves of business warehouses, but two-thirds of all Americans, at that time, were ill-housed, ill-clothed and ill-fed.

While approximately 600,000 farm families were on relief as late as 1936 and only one child in six examined in Chicago was in robust health, we destroyed pigs so that the selling price on pigs could be maintained. While one child in 12 suffered from malnutrition in the depression years, we destroyed oranges, full of Vitamin C, so that the price on oranges could be kept at a profitable level. Might we point it out as probable that the recent rejection of 4,500,000 young men as unfit for the Armed Forces, could be traced to this prolonged period of malnutrition in their early childhood.

When only four in 100 farm families in the depression years were in good physical condition, and while 250,000 babies were born annually in United States without benefit of a doctor or even a nurse present, 6,000 doctors were on relief in New York State.

During the depression and during this war, three out of ten houses have been below a decent standard of livability, and 8,000,000 families occupying them existed with the barest of necessities. It took Marshall Field, the philanthropist, to point out that low-cost housing units were not profitable for private enterprise and that

it was the function of Government to provide such units.

As late as March 1941, approximately 10 percent of our population were receiving poor relief, and 60 percent of all persons over 65 years of age were on charity or relief.

Our productive capacity, using technological methods, has gone up by leaps and bounds, but our income has remained practically stationary or gone down and in many cases out altogether. Free Enterprise during those depression years, when there was absolutely no government 'interference' did not furnish jobs nor purchasing power. Government and Government alone, with WPA and various Federal works projects or by direct relief, DID furnish many millions of Americans with some purchasing power.

War is Good Business

War, and war alone, has temporarily solved the unemployment problem. War also solved another important problem temporarily, the problem of business. It furnished business with a topnotch customer, Uncle Sam. In his Message on the State of the Union on January 6, 1945, the President of the United States declared:

We have had full employment during the war. We have had it because the Government has been ready to buy all the materials of war which the country could produce — and this has amounted to approximately half our present productive capacity.

Do you doubt that war is good business? Let the facts speak for themselves. War profits for such companies as Bethlehem Steel, International Harvester, Allied Chemical & Dye Company, Standard Oil of Indiana, Consolidated Vultee Aircraft, Goodyear Tire & Rubber, Union Pacific, and many others, in the year 1942 were twice as much AFTER TAXES as in 1939.

The Nazi Government obtained \$25,000,000 to \$35,000,000 of American money between the years 1936 and 1941, for use in Germany's expanding war economy.

Prior to the war, American business supplied the tools of war to our enemies; notably 22,734,000 barrels of petroleum to Japan in 1940, together with thousands of tons of scrap iron. Who protested these shipments? *Technocracy* did. Did any other organization? Very few. And why not? Simply because the Price System works that way. A customer is a customer even if that customer happens to be arming against us.

So far we citizens on the home front have been fighting for business also; we have been fighting to maintain the status quo. Let us not be too complacent about our contribution to the war effort. If we had installed Total Conscription when it first became necessary in 1940, Lt. Col. W. E. Dyess, reporting on the Bataan March of Death, could not have described it thus:

On that march, through the swirling dust we could see a long line of trucks, standing bumper

to bumper. There were hundreds of them. And every last one of them was an American make. I saw Fords, which predominated, Chevrolets, General Motors and others. These were not captured trucks. They bore Jap army insignia and had been landed from ships of the invasion fleet. It is hard to describe what we felt at seeing these familiar American machines filled with jeering, snarling Japs. It was a sort of super-sinking feeling. We had become accustomed to having American iron thrown at us by the Japs, but this was a little too much.

War, that last shot in the arm of the dying Price System, is losing its effect. Why? Because of the increased use of technology speeded up by the very demands of that war itself.

He Who Calls the Dance—

The unemployment problem will soon be back once more to plague us; only this time it will be much bigger. This time we can't supply another shot in the arm; there isn't any serum left. We cannot operate an economy of abundance with the tools of scarcity. There is no solution to disemployment under the Price System; it is a natural part of that system. Any system using money as a medium of exchange has always operated for the benefit of the few at the top at the expense of the many at the bottom.

Under a Price System, we do not DISTRIBUTE anything. Such a sys-

tem is organized to buy and sell at a profitable price. We are so conditioned in business psychology that all of our plans revolve around money; not one of them revolves around DISTRIBUTION of America's abundance. We can visualize nothing but more of the same. How can conditions in the postwar under the Price System be anything but WORSE than they were before the war, when technology has been so stepped up that less man-hours are needed now than prior to the war? We have not solved a single one of our problems; we have simply put off the day of reckoning. When this war is over, that day of reckoning will come, perhaps before, and we must at long last face and solve those problems which have been with us for 26 years, or go down to defeat and chaos.

Business Means Business First

One political candidate before the last election toured the country promising employment because of the great demand on business to produce automobiles, vacuum cleaners, refrigerators, irons, washing machines and other necessities people need. We NEEDED all these things in 1938; but in 1938 there were 24,000,000 homes with no refrigerators, 20,000,000 with no washing machines. We NEEDED those things in 1938, but despite our great need business did not produce them, for the simple reason that business couldn't get its price for them.

We did not have purchasing power

because those goods then, as now, were produced by technology rather than man-hours of labor. The only way we could buy those articles in 1938, and the only way we can buy those articles in the coming postwar period under the Price System is by selling our man-hours of labor. Does the step-up in the use of technology during these war years augur well for the exchange of our man-hours of labor in the postwar period?

Most of us have a very erroneous conception about business; we actually are naive enough to assume that business is concerned with whether or not we are employed. No assumption could be less correct. If that were so, why could not business solve the disemployment problem in ten years of depression? There was no government 'interference' then but much government assistance to business in the form of pump priming. Nothing interfered except the lack of paying customers, customers that could buy back the goods produced.

The Price System is not now, has not been in the past, and will not in the future be operated for the general welfare. Its sole function is to keep business going, and business' sole purpose is to make money. When any particular business, large or small, ceases making money, it ceases to be a business. It matters not in the least how many people are employed in that particular business, they are automatically thrown out of work. Remember THAT when you read the glowing promises made by General Motors Corporation, or Ford, or International Harvester, or the

railroads, or the political parties about 60,000,000 postwar jobs!

If business pretends to guarantee you full employment in the postwar transition period, under a Price System, it is so much dust in your eyes. But let Alfred P. Sloan, Jr., Chairman of General Motors Corporation, and a champion of 'free enterprise,' state the case for jobs under a Price System, as he did at the annual dinner meeting of the Academy of Political Sciences in New York City on November 15, 1944:

. . . JOBS are an end result. They are not means to an end. They do not just HAPPEN. They do not result from wishful thinking. There are no rabbits in this particular hat. Political promises do not create jobs. And never will. Jobs flow from a combination of capital, management and opportunity. And from nothing else! The catalyst is a prospective profit. Without this ingredient there can be NO jobs in a free economy.

The fear that there will not be jobs for all is the great fear now besetting and afflicting American life. There is much socially useful work to be done in America, but none of it will ever be done under the Price System because it will not be profitable for 'free enterprise.' We've needed to rebuild America for a long time and to liberate its people from want in the midst of abundance. We need houses, roads, recreation centers, parks, schools, hospitals, a continental hydrology system, more power

plants, a continental highway system. None of this socially useful work, which would keep us all employed for 20 years or more, will be done by 'free enterprise' because it would not be profitable, regardless of the general welfare.

After The Ball Is Over

If we insist upon operating under the tyranny of a Price System in the postwar period, the competition for jobs will be terrific. There will be many less jobs than before the war, due to the introduction of new technology since 1939, when we had 11 million unemployed. Let us get that point straight. Purchasing power is absolutely essential under a Price System, and total purchasing power depends upon total man-hours of labor. On the acceptance of that knowledge hinges the decision we must make soon, and very soon indeed.

A simple thing like a shift from a 48-hour week to a 40-hour week will mean a cut in take-home wages of 20 percent. An estimated 40 percent slash in war production at the end of the European war will throw at least 10 millions out of jobs. One-half of the population will have to make shifts in the labor market, as well as geographic shifts, according to the American Federation of Labor. When government spending for war drops, purchasing power for many Americans will completely disappear. And there are 13,000,000 American families who do not own a single war bond to tide them over.

By 1946 the Department of Com-

merce predicts 19,000,000 unemployed due to war-developed technology, if the war is over by then. By 1950 the business journals predict a complete crash. And there these two exponents of 'free private enterprise' depart and leave you in 1950, in a complete collapse, with no solution to that debacle.

For these three years of war more human beings have been needed to tend the machines producing the goods of war. For a short three years some of us have been 'in the money' so to speak and many of us may think that it is going on forever. Our awakening will be quick, rude and drastic.

On September 16, 1944, *Business Week* reported on the first survey of its kind ever made; a survey by the Bureau of Labor Statistics for the War Production Board, at Buffalo, New York. Buffalo has some 40 war plants, which employ about one-half of the total factory employment there. Peacetime needs of these 40 plants were 37,000 persons; wartime peak was 109,000; and the predicted possible need in the postwar is for 54,000 persons. These are the first official figures revealed by private enterprise to a government bureau. *Business Week's* editors admit that the postwar estimates are 'optimistic' to say the least. This survey is indicative of what is to come when war production ends. It is the fear of this cut from wartime peak employment to much lower postwar employment which caused the CIO Steel Workers to demand a guaranteed minimum

weekly wage for fifty weeks in every year.

How can a weekly wage, or any wage for that matter, be guaranteed when man-hours of labor are constantly being permanently displaced by technology?

In 1940, it took 440 men one year to build a B-24; in 1943 only 17 men were needed. For every 100 hours in 1940 to build an A-20, only five were needed in 1944. International Harvester Company has a machine which will pick 1,000 pounds of cotton per hour; two men only are needed to operate the machine. It takes one worker one day to pick 125 to 150 pounds of cotton by hand. Eight million persons in the South are dependent upon cotton for a living. Add two and two and you don't get nine.

The hope for new industries to take up the slack is quickly dispelled by a glance at just a few. Synthetic rubber, surely that will require workers? Only 18,000 persons, employed in 46 synthetic rubber plants, are needed to produce the requirements of the United States and Canada combined; and one plant at Institute, W. Va., can produce one-seventh of all United States needs, with only 1,250 persons employed.

The Defense Plant Corporation in October 1944 was scheduled to open a new plant to produce rayon tire cord. Only 300 people will be needed to operate this plant with the capacity of producing 12 million pounds of rayon cord per year by technological methods.

Reconvert to What, Scarcity?

No political party, no politician, no business and no business man seems to understand the role of technology. Therefore, we can have nothing but confusion in our attempts to solve our postwar problems by Price System methods. As an aid to employment, the Senate Committee on Reconversion in October 1944 proposed a ban on the reconversion of all Government-owned plants in eleven midwestern States which during peacetime produced 65 percent of national manufactures.

The best which Congress has offered to date, based on purchasing power and money, was a return to a 40-hour week (with a consequent drop in pay), unemployment compensation, some retraining and re-employment aids, a broad program of public works to relieve unemployment, and the placement of cutbacks with an eye to maintain employment.

How weak and inadequate these plans are! What else can we expect within the framework of the Price System? America's destiny can never be realized with political palliatives or picayunish attempts to furnish us with a measly portion of purchasing power.

Tragic as the war has been, it has brought some very fundamental changes to the United States. Whether we wish it or not, we have a bigger stake in America than when the war began. With our bonds and taxes, we have become the owners of tremendous physical goods and services. We

own practically all of the synthetic rubber plants; nearly all aircraft factory capacity; one-half of the machine tool capacity; one-tenth of steel production; 20 of the 50 high octane aviation gasoline plants; permanent and temporary housing units; food galore, trucks, cars, tractors, unissued government clothing, medical and dental supplies, numerous other articles. An attempt will be made to sell this to 'free enterprise' without upsetting the business applecart. During the war we invested \$25,000,000,000 in plants; Free Enterprise invested only 2½ percent of the total.

To Whom Do The New Plants Belong?

We can never go back to 1939; not unless we first destroy this equipment; just as the soldier can never go back to jobs which are not there, buildings torn down, and women in the jobs anyway.

Shall we permit this which we own to be sold to private enterprise, or shall we, as Mayor LaGuardia has proposed, destroy all surplus goods which might cause unemployment?

The dictator Technology, that swiftly moving finger of our power age, writes, and having writ, removes not a single kilowatt of it. Technology is demanding that we discard the rules of the game of the Price System, that game of enforcing scarcity and ignoring abundance. Technology will have its way, for upon it is our way of life dependent. *It is the American Way of Life.*

Technocracy Has The Answer

Technocracy foresaw the need for an overall design of operating, both in war and in the transition period, and presented the first half of its program of Total Conscription as early as July 1940. In November 1940 the second half of that design was presented. Total Conscription is not the social program of Technocracy; it is an emergency program; designed to win the war in the shortest possible time; with the least loss in lives and natural resources. It will be much more necessary in the transition period to prevent chaos. It is the natural outgrowth of the scientific analysis made for 26 years by this organization. Total Conscription can be installed by constitutional methods only. Events have already made this design necessary; and an informed public will demand and achieve its adoption.

Essentially Total Conscription calls for the Total Mobilization of all of our resources, men, machines, materiel and money, with National Service from all and Profits to none. It is a method of operating along scientific, technological lines, which will insure that no American need suffer from lack of food, clothing, housing, medical and dental care or education for his children during the transition period, when income may be greatly curtailed. It insures that we need not duplicate the conditions prevalent in the depression years, in the coming transition from war to peace. It furnishes a yardstick for measuring the physical operating characteristics of

America, the physical resources, and then a decision as to which direction we want to go in the future.

On the basis of the Energy Survey of North America, a physical survey of our resources and technology, it was possible in 1921 for the Technical Alliance of North America to state that a major economic crisis was due to occur in America by April 1930. Not enough Americans took heed nor listened. Between 1921 and 1929—weren't we the most prosperous nation on earth? What did we have to worry about? Nevertheless, 6 months BEFORE the time mentioned by Technocracy, the crash occurred; and we have never recovered from the effects of that crash. Technocracy has a dozen other major correct social predictions to its credit.

Today, TECHNOCRACY is unequivocally stating that ANY tomorrow on this Continent must be based solely on the greater use of technology; not lesser. In order to prevent chaos, we must organize to distribute abundance. In order to survive as a nation, we must discard our old outworn political and financial methods designed for the era in which natural scarcity prevailed. We must liquidate our pro-fascists at home wherever they may be found, by installing the only design capable of doing these things. The trend of events in North America demands Total Mobilization of all machines, materiel and money, as well as men and women, in the first social mass movement in all history.

How many of us will listen and heed?

It's Not the Heat, It's the Price System

EFFICIENCY ENGINEER VS. DESIGN ENGINEER

(Two Articles on the Same Subject)

Keeping Your Hat in the Ring

by Dr. E. A. Irvin

Reprinted by Permission from G. M. Folks, August, 1944

The following article on 'Hot Weather and Salt Tablets Prevention of Heat Exhaustion' is the seventh of a series written by Dr. E. A. Irvin, medical director of the Cadillac Motor Car Division, Detroit, in the interest of health and safety.

A very common type of illness, which is associated with hot weather, is 'heat exhaustion.' This condition may vary from extremely mild cases to severe attacks causing complete collapse. This condition is most prevalent among workers engaged in hot, heavy work; however, it does occur in mild forms in various lighter types of work during hot, humid weather. In its milder forms 'heat sickness' is very often not recognized as such, showing up as a loss of energy, increased fatigue or a letdown, a situation exceedingly undesirable in war times. Medical research has shown that loss of salt from the body through excessive sweating is at the bottom of the trouble. There is a simple explanation for this fact. Every body cell, the blood stream, spinal cord, the brain, etc., must contain a certain amount of water if the proper chemical balance necessary for nor-

mal body functions is to be maintained. Unless salt is present in the proper quantities, the various parts of the body cannot hold the necessary amount of water. When body salt is lost through excessive sweating and not replaced promptly, cells and other parts of the body lose water, upsetting the delicate chemical balance of tissue and body fluid. If the salt loss is slight, the physical reaction will be a tired, uncomfortable, letdown feeling. The mild case is the type that may cause trouble because it will go unnoticed.

Workers Who Sweat Need Salt

Even a slight salt loss saps energy and slows up muscular coordination and reactions. When this happens men feel tired and uncomfortable, mistakes increase, individual producing capacity goes down and as strength and efficiency are undermined men become careless and serious accidents can easily occur.

To prevent these unnoticed but highly dangerous cases salt lost through sweating or other bodily functions should be replaced at the same time and in the same ratio as the loss. It is generally agreed that the average worker needs during the day one level teaspoon of salt for

every gallon of water he drinks. A part of the salt requirement can be fulfilled by adding additional salt to our food in the form of seasoning; however, this is rarely adequate for the individual who perspires moderately. The additional salt requirement may be fulfilled by taking salt tablets. The tablets contain regular table salt and should be swallowed whole with a drink of water. A few individuals develop a mild type of indigestion when salt is taken in large quantities. It is advisable for these individuals to break a tablet in half and take only one-half tablet at one time. One of the most frequent causes

of indigestion associated with the taking of salt tablets is due to individuals taking the salt on an empty stomach. It is extremely important that all individuals eat some type of breakfast before reporting to work because 'heat sickness' is much more common among those who fail to eat before reporting to work. Workers engaged in light to medium work will require from four to six tablets daily; workers engaged in heavy work from eight to ten tablets and workers in extra heavy and hot work from twelve to fifteen tablets during an eight-hour day. Take salt, avoid that let-down!

Heat Sickness, a Medical or Engineering Problem?

by Elvin Nelson 8741-1

The following article on Heat Sickness is by a factory worker who is a Technocrat. He approaches the subject from a different angle than the Doctor does. As we see, the question becomes larger than a simple prescription of taking salt tablets. In fact, the entire Price System becomes involved. Its interference role is clearly illustrated. This is a good example of the difference between the approach of the efficiency engineer and the designing engineer. When factory buildings are designed scientifically, there will be no need to take salt tablets

at work. In the meantime, we'll have to string along with the doctors; they're doing the best that the Price System will permit.

'In The Sweat Of Thy Brow'

Doctors have found out that loss of salt from the body through excessive sweating causes heat sickness. To relieve the condition, they advise us to take salt tablets to relieve the salt deficiency. But, in so doing we may get indigestion, they admit. At any rate, nothing has been done to relieve the uncomfortable feeling of sweating in itself, so the problem appears

to be very unsatisfactorily disposed of.

Why do we have the doctors trying to solve a problem which belongs to the engineers?

What has an engineer to do with sick people, you may ask?

An engineer will install air-conditioning and that will not only solve the problem but will remove it completely. Air-conditioning will also help in removing the causes of common colds which the doctors believe come in considerable degree from failure to properly humidify the air within heated buildings.

Complete air-conditioning will involve the following equipment: A ventilating system, heating and cooling systems, humidifier and dehumidifier, and a filter.

A Thermodynamic heating system would be the most desirable where an air-conditioning system is to be installed, for the reason that the same equipment can be used for heating in winter and cooling in summer. A Thermodynamic heating system is the same as a refrigeration system, designed so that the refrigeration cycle can be reversed. That is, in addition to taking heat out of a building, the heat can be put into the building, or home, whichever it may be.

Oceans of Heat and Coolness

In applying a Thermodynamic heating system to a factory building, one bank of coils should be in connection with the ventilation system, the other bank of coils in the ground below the frost line. For cleaning the air, type E electromatic filter would

be a desirable filter because it is a self-cleaning electric precipitator for removing dust and smoke and cutting oil mist and welding fumes from the air.

Some people express the opinion that air-conditioning is not practical because of insufficient insulation, too many windows, etc. If insulation is good enough for heating in winter time, it will be good enough for cooling in summer time also. And as far as windows are concerned, why do we have windows in a modern plant? If the light has to be on at night as well as day, then why have windows at all? You don't get any light from the windows at night and not enough in the daytime.

The cost of air-conditioning is not prohibitive, as some people may think. If a Thermodynamic heating system is used, the cost of heating will be less than half that of direct heating.

In *Technocracy Magazine*, A-5, December, 1935, is a description of Thermodynamic heating and a chart showing the efficiency in comparison with direct heat and also how it can be used in homes. The following quotation is from that source:

Enter The Price System

It is a safe estimate that by universal use of heating by this method the fuel required would be reduced at least 50 percent. If that is the case, why is it not introduced?

There are several reasons. One is just the ordinary inertia that has to be overcome before any-

thing new is attempted. The greater part of this is due to Price System interference control, because what is technically feasible and what financially-minded business men can be induced to do are rarely synonymous. Much opposition could be expected from the gas, electric, coal, and oil companies whose business would be curtailed.

A graver reason is that such a system requires low temperature radiators which would have to be almost as extensive as the walls and would, accordingly, probably have to be built as an integral part of the walls themselves. That, of course, requires that the heating system be incorporated into the design of the house as an integral part, which is remote from present day practice in architecture, except in cases where fabricated houses are being considered.

The saving of non-replaceable fuel that would be effected by such a system is enormous, and is from every social point of view highly desirable; but for some time yet thermodynamic

heating is likely to remain on that extensive list of socially needed and technologically feasible developments whose realization is rendered remote under the interference control of the Price System.

There you have it. A doctor spends ten years studying how to treat human ailments. In medical school they teach him the physiology and pathology of the body. One primary fact is, however, carefully excluded from the curriculum. That is that the Price System is conceived in waste and dedicated to scarcity. If either waste or scarcity were abolished, the Price System would collapse overnight.

Doctors of all schools compete for the business of the sick. The more sick there are, the greater doctors prosper. It is an ugly thought, but it's a fact. It is not in the economic interests of doctors to abolish sickness. As a group they do the best they can, but that best dare not be too good, else they lose a livelihood.

The problem of heat sickness is a minor one. It can be quickly abolished by the design engineer. But the Price System we still have with us, Cushlamachree!

THEY CAN'T DO THAT

'Calculating machine, developed at Chrysler. It estimates automatically barometric pressure and air pressure, translates engine r.p.m. and brake load into horsepower together with fuel consumption. Skilled manpower not needed on dynamometer operations. Youths with only grade school math can operate it. It's faster and more proof against error than the human being

could be.' From *Detroit News*, Dec. 19, 1944.

'Progressive Rocker Arm Welder for aluminum is on the market. Eliminates tens of thousands of punching, drilling, reaming and riveting operations—plus the rivets themselves—each machine will save 15,000 to 30,000 rivets every day!' From *Adv.* in *Detroit News*, Oct. 17, 1943.

The First American Papermakers

Victor Wolfgang von Hagen

Author of 'The Aztec and Maya Papermakers'

Reprinted by Permission of The Paper Industry and Paper World, December, 1944

That eminent authority on old papermaking, Dard Hunter, has told us in many of his publications that *paper was a Chinese invention*. 'The Chinese eunuch Ts'ai Lun, in the year A. D. 105, proclaimed his marvelous invention of true paper—a thin felted material formed upon flat porous moulds from macerated vegetable fibre.' And, step by step, this *True Paper* penetrated both ends of the Taklamakan desert until, by the Fifth Century, *true paper* was in general use throughout all Central Asia. From thence it spread to Europe, to England, and centuries later, to America.

Paper, it is generally accepted, was only first manufactured in America in 1690 (one of the last civilized places on the earth's surface to establish paper mills), but what of the Aztecs and the Mayas? They were making, and they were using paper long before the Chinese are recorded to have done so. So who was using 'what' and 'where' depends on a point of view. Paper may have two definitions, the cultural and the technical, for paper cannot be defined wholly by the process of its manufacture. The Aztecs and the Mayas were not the originators of true paper, but they were very, very close to it. Paper was in general use by the Mayan civilization in Southern Mex-

ico as early as the Second Century B.C. They were 'the first American papermakers.'

Let us glance quickly at the Mayas. They were typical American Indians, agriculturists mostly, huntsmen at intervals. Having learned to 'domesticate' such products as corn, potatoes, squash, and beans, they then provided themselves with leisure. They lived in a land where soft limestone lay exposed below the verdure of the jungle. The leisure that a beneficent agricultural system gave them was used in carving that limestone. Out of it they fashioned such beautiful cities as Copan, Palenque, and Quirigua. Upon these cities they lavished designs that, even today, excite the artist. Without knowledge of metal, without beasts of burden, the Mayas built their civilization. Theirs was a true neolithic world, a virtual stone age. Yet they did more than this. They were traders and merchantmen, too. Paths were cut through the green mansions of tropical Middle America; trade and commerce were far-flung, even beyond the limits of their realm. Ideas in art, religion, and government were spread broadcast, and these served to quicken other tribes of other speech and lesser culture. Astronomy became highly developed and gave birth to a calendar. The Mayas even discovered the

concept of zero. And so out of all this maze of abstract mental activity there arose a system of ideographic-painting which eventuated into hieroglyphics and further evolved into a form of writing. This became literature. As a corollary to writing, a smooth writing surface had to be invented. Thus, in some remote epoch, a paper superior in texture and durability to Egyptian papyrus was perfected by the Mayas. This bark-fiber paper they called *huun*.

Paper gave permanent content to the Mayan civilization. The invention of writing, and of paper on which to record it, gave expression and durability to its ideas. Paper, in the role of a sketch pad, played its part in the erection of the gigantic architectural monuments. Paper became the transmissional agent of Mayan civilization from one epoch to another, and gave substance to its oral traditions. As man had done elsewhere—in China, in Egypt, in Rome, in Greece—so did the Mayas accumulate books (and they were actually books). These they housed and protected through the centuries. And when the Mayan peoples went into eclipse in the year 600-9 A.D., the Aztecs in Central Mexico took over. The Aztecs entered the lake regions of the valley of Mexico, gradually absorbed the commanding island and called it Tenochtitlan (from their own tribal derivation, Tenochcoas). With a judicious use of rapine, bribery and statecraft, they enlarged this realm. As the Romans took over Greek culture, so did the Aztecs take over the Toltec.

Under the Aztecs much of Middle America became systematized. Trade was extended; so were the levies of tribute. In no civilization that had heretofore appeared in the Americas was there so insistent a demand for paper.

Paper was needed to record tributes, to mark the villages and cities tributary to Mexico. Paper was needed for legal documents. Paper, made into rolls thirty feet in length, was used as by the scribes of ancient Toth to record methodically the accretions of their conquests. Paper took on, as it did with the Chinese, a religious and ceremonial character. Paper, folded like a railroad timetable was used for preparing the books, forming the libraries which were housed at *Taxcoco*. And, finally, paper was itself a tribute. Entered in one of the most famous Mexican codices, the *Libro de los Tributos*, there is this highly significant item: *'Twenty-four thousand reams of paper are to be brought yearly to the store-houses of the ruler of Tenochtitlan.'*

'Twenty-four thousand reams of paper . . .' Judged by any standard, this is an enormous amount of primitive paper, even when the Spanish word *resmas** is nothing else than an expression which fortuitously coincided with the Aztec numeral *pilli*, or twenty. *'Twenty-four thousand reams'*—480,000 sheets of paper, in sum, was then to be paid annually in tribute. This enormous consump-

*Ream is adopted from the Spanish *resmas*, which in turn owes its terminological derivation to the Arabic *rizmah*, a bundle, especially a bundle of paper.

tion would seem to suggest that paper-making had left the craft stage and had entered that of industry.

Neither the papyrus of the Egyptians nor the *amatl-paper* of the Aztecs was actually "paper" as we now understand it. True paper reduced to an encyclopedic definition, is a more or less thin tissue, composed of any fibrous material, the individual fibers of which are first separated by mechanical action (beating, pounding, etc.) and are then deposited (actually felted) on a mould while suspended in water. This is 'true paper' and the Chinese were the inventors of it. It was the Chinese who devised the implement—the papermaking mould which was capable of picking up the masticated fibers, so constructed as to allow the water to escape, leaving the interwoven fibers in an even, homogeneous mass. This, as every paper-maker knows, is paper.

Throughout the centuries, this has remained the principal technique of papermaking, and upon this principle the modern paper machines were founded. Not only did the Chinese invent and perfect true paper, but from the heart of China paper began its westward march.

Yet, other civilizations reached great cultural heights without the knowledge of 'true paper.' The Egyptians and Syrians manufactured papyrus, the Mayas, *huun-paper* and the Aztecs perfected *amatl-paper*. In default of the technics of 'true paper,' they still perfected a writing surface of considerable utility. This invention affected civilization materially. While it is not necessarily

true that the quantity of paper consumed stands in direct relation to the intellectual development of a nation (for the Inca civilization in South America had neither paper nor writing), it is nonetheless true that man's intellectual rise has been astride the fibrous material called paper—no matter what its mode of manufacture. Whether it was couched in a mould as was the Chinese paper, or pressed into a laminated substance as was papyrus, or beaten from the inner-bark of the wild fig tree, as was the *amatl-paper* of the Aztecs, it served for writing—and writing, once perfected, freed communication from the limitation of time-space factors.

How was this primitive American paper made? Very simply. It was beaten from the bast-fibers of the *Ficus*, a tropical tree related to the mulberries. In essence and in the beginning, Mayan paper was fashioned much as tapa cloth (although Dard Hunter will not accept the term tapa cloth, since it is paper, not cloth). The soft inner bast fibers were pulled from the tree and made into a roll and submerged into a running stream to free it of its 'milky sap.' Then days later it was placed on a smooth surface and beaten with wooden beaters, grooved with horizontal ridges. The pounding intermeshed the delicate fibers until a smooth, soft, pliable and thin surface was created. Then with heated stone 'irons' it was burnished. Cut into strips, the artist-composer wrote and drew upon the strip; it was then folded screenwise into book form.

So far there is nothing unusual about the technique of the first American papermakers. The methods, the beaters, even the same species of plant are universally used everywhere by primitive people.

But here rises the exception. The American Indians were the only people using the tapa-like paper material who used it culturally, as paper. They began not only to draw upon it, but to write upon it. They developed a series of ideographs which, with illustrations, created literature. This was the first and only time that tapa paper became a truly cultural medium.

This development did not end with the Mayas. When their successors, the Aztecs, took over the ancient world of Mexico, they improved upon the technique of the Mayan papermakers. Not only was the tapa paper made into rolls and strips, but into paper sheets. Apparently, so much paper was used, the paper craftsmen found themselves running out of fibers, since when a tree was stripped of its entire outer bark, it died. Necessity being the mother of invention, everywhere it was suggested to the papermakers that they utilize the branches. Only from these they obtained smaller lengths of fibers. Laid edge to edge on a small board, these fibers were pounded gently so that the edges of the strips were meshed, felted, in a word, couched, to form a sheet of paper. This was the only advance open to tapa paper manufacture. The methods are so close to the paper that it is hard to know

where one begins and the other ends. By the introduction of this technique to papermaking, even greater quantities of paper could be manufactured. The Aztec rulers made it a point to levy tribute on these papermaking villages. The consumption of paper by the Aztec people was truly enormous.

It is not alone from the records they left us, nor from their monuments which still defy time, that these facts have been gathered. For ancient papermaking still continues in Mexico. In little villages in Pueblo and Vera Cruz, Indian women still make paper, as did their ancestors five hundred years ago. Neither the instruments nor the techniques have changed. Time has altered nothing. And when, in the course of preparing a book about these ancient papermakers, I discovered these people, they (with much urging, of course), prepared actual paper samples for the book, precisely as would their ancestors had they lived and had they not been snuffed out by the roaring thunder of the Ordnance of Hernan Cortes.

America need bow its head to no other culture. Whether it be Greek, or Egyptian, Chinese or Burmese, the patient American Indian craftsman, working on this green continent, discovered as early as any, the means of conveying his thoughts by putting them down on paper. They had no knowledge of it then, but these Mayas were the First American Papermakers.

'In Chicago one person out of nine is a Negro.'

Free Enterprise Forever!

THINK AMERICAN!

by The Peripatetic Technocrat

Sign in a Cleveland, Ohio, bus station: 'Americans make up less than 7% of the world's population. Yet we have 35% of the world's railroads; 45% of the world's radio sets; 70% of the world's automobiles. Our privately run business system works. Think American.'

This neat bit of propaganda reminds us of the spectator at a prize fight who rushed up to the winner after the fight and exclaimed: 'We licked him, didn't we?' Technology has built America's industrial civilization, not business. The function of business is to exploit the natural resources of this land and its people for all the profit the traffic can bear. The voice of Technology has been mute. The voice of the Price System is ever with us.

5,000,000 Consumers Can't Be Wrong

Anthracite Industries Incorporated has designed and built in their laboratory the first automatic home heating unit constructed for the sole use of hard coal. The burning unit itself is only 8 by 18 inches in size and weighs only 75 pounds. It is cylindrical in shape and consists of a special steel fire tube surrounded by a 2 inch jacket through which the hot water is circulated. A unit with a 4 inch fire tube puts out 50,000 B.T.U.'s per hour, enough for a 4 room house. A unit with a 6 inch fire tube will heat an 8 room house.

The outfit, complete, consists of a blower that sucks air through the fire tube and out the flue; a worm that feeds coal slowly into the fire tube at one end and pushes the ashes out the other end; a pump that forces water through the jacket and into the

radiators at a fast rate. Overall size is about three feet long by two feet square. An old style furnace weighs around 1,000 pounds and fills up half the average basement. Fuel efficiency in the old style furnace is about 60 percent. In the new midget furnace it is 84 percent. *This 24 percent increase in efficiency means a commensurate saving in coal.* The furnace is easy to start and reaches peak heat in 15 minutes.

About 5,000,000 hard coal stoves are in use for home heating in the U. S. This new heating unit employs a new principle in combustion. In the old style furnace, the fire bed is 24 to 30 inches wide. The temperature of the burning coal in such a unit hovers around 1,000° F. at the outer 3 inches of the fire, while in the center of the fire bed, it may rise to 3,000° F. At this higher temperature anthracite does not burn completely

to carbon dioxide but gives off much carbon monoxide. When carbon burns to carbon monoxide, only one-third of the total heat is released in the firebed and two-thirds is released in the blue flame above the firebed. This blue flame burns with additional air to form carbon dioxide. Most of this blue flame heat is lost up the flue.

Technology Is Ruthless

In the new unit no carbon monoxide is formed. Only 4 or 5 small lumps of coal are burning in the fire tube, at any one time. The temperature of the burning coal does not go above 1,200° F. Thus, complete and very efficient combustion is obtained. The three moving parts of the unit, consisting of pump, blower and worm, can all be run from one motor. The speed of operation of these three moving parts determines the B.T.U. output of the unit at any given time. Thermostatic control over the motor determines the rate of burning so the furnace can be cut down so as to provide only sufficient heat for hot water or stepped up to cope with zero weather.

No chimney is required for the unit because of the forced draft of exhaust air and gas. A four inch vent leading directly to the outside is sufficient. Because of the forced water circulation there is no dependency on gravity flow (hot water or air rising). Thus the unit can be installed in any part of the house. When installed in horizontal position, the entire operation is automatic. In the tiny firebed inside the cylindrical tube, the

coal burns five times as fast as in the big old style furnace. Despite this rate of burning, it saves over 25 percent in fuel because the coal burns completely. No clinkers are formed because the heat is carried away so quickly and because the coal burns at a temperature below the point at which clinkers can form.

The Anthracite Industries Incorporated reasons that the new unit will make a place for itself because of its small size, its low raw material cost of manufacture, its simplicity of design, its light weight, and its ease of installation and operation. The automatic controls are the most costly part of the unit. The manufacturers of automatic stokers for old style furnaces are thus faced with the advancing march of technology. The law of the Price System jungle speaks only one language. 'Eat or be eaten.'

Another County Heard From

The Bituminous Coal Institute and 27 stove manufacturers, working together, have brought out what is characterized as 'the first revolutionary development in the heating stove in 200 years.' It is now undergoing trials in 20 homes, selected from among the 17,500,000 in the United States still using heating stoves. The soft coal stove which the Bituminous Institute is advancing is two feet square by three feet high. It comes in snappy, cabinet styles. Capacity of the stove is 100 pounds of coal, and it requires reloading only every 50 to 60 hours, depending on the weather. It will burn the cheapest

grades of coal so efficiently that *an overall saving of one-third in total amount consumed results.*

A \$60.00 unit is guaranteed to heat a 5 room house adequately. Although a stovepipe is used in conjunction with this soft coal stove, there is no smoke or gas released. The unit eats up its own smoke and gas through employment of three new factors in the design: plenty of air in the right place at the right time; an integrally designed series of high temperature refractory flues; a prescribed route of travel for the gases. A kitchen range based on the same general design will also be released. Neither one is automatic, but refuelling is cut to the irreducible minimum.

March Of The New Dimes

In 1934 an impoverished inventor demonstrated a small gasoline burning automobile heater to a group of Stewart-Warner officials. It worked. By 1941 there were a million South Wind heaters installed in passenger cars. Now, this gasoline burning heater is seeing service in military planes, motor torpedo boats, hospital tents and in many other uses with the Armed Forces all over the world. The heater is *small, lightweight and safe*. One type puts out 100,000 B.T.U.'s per hour and is used in cold weather to warm plane engines.

Redesigned to use natural gas or fuel oil, there are two possible models of this type of heater for home use. Neither type requires a chimney,

small vents through the wall being sufficient. The first model is a midget 8 inches in diameter by 9 inches long. One would be installed in each room in a house. They are completely automatic, with fan and blower. Each one would be connected to a central fuel tank. This arrangement gives separate control over the temperature in each room.

A larger model puts out 200,000 B.T.U.'s per hour. This is adequate for a 10 room house in a cold climate. This model is the size of an office waste basket, 10 inches by 15 inches, and weighs only 21 pounds. It is hermetically sealed and completely automatic, using an electric blower and an accelerating flow arrangement for the control of output.

Fall In Step, Or Else

On the face of it, this story is only a recitation of advancements in the technology of home heating, and a tribute to the skill of American engineers. It is all that, but it is much more besides. The three examples cited illustrate the trends of events as a whole in America. They illustrate how business is driven in its effort to avert the impact of technology upon its structure. They show clearly how business is forced to employ ever more and more technology in order to maintain its preferential position against competition. They show, also, how each time business is driven to adopt newer methods, it uses only as much as it is forced to use.

Neither the Bituminous Institute,

the Anthracite Industries, nor the oil and gas interests are one bit concerned about conserving America's nonreplaceable natural resources. If they were, they would dust off the contents of the pigeon holes in their research files and go all out for thermodynamic heating. See A-5 *Technocracy Magazine*. Here is a really scientific method for not only heating homes in Winter but cooling them in Summer. Thermodynamic heating would cut fuel consumption 50 percent. But, perhaps it's one of those important projects which are too big for the picayunish methods of the Price System, such as, for instance: A Continental Hydrology System; a Continental Power Transmission System; a Continental Highway System; a Continental Inland Waterways System; a Continental Housing System; a Continental Public Health System; a Continental Fleet of Flying Wings, etc., etc., etc.

The microscopic, nose length type of planning indulged in by 'free enterprise' (when it is driven to any planning at all) is well illustrated in the philosophy of Eric Johnston, president of the Chamber of Commerce of the U.S., recorded elsewhere in this issue. This is to the effect that the answer to the postwar problem of business is 'the production of new kinds of things.'

Is You Is, Or Is You Ain't My Baby?

That's it! New kinds of things, new artificial needs. Keep the squirrels racing along the neverending, never stopping platform. Keep them

busy fussing with gadgets. Keep them broke buying parts. Keep them wrought up about phony issues. Keep them emotionalized over all the secondary, tertiary and piddling problems of the day. This diverts attention from the major issue. Carry on an endless campaign of discussion. Bury them up in a sea of semantic hogwash. Turn on the radio dramas full blast. Open wide the portals of the moronic movies. Pretty soon we'll have television. Boy, Oh Boy! 'New Kinds of Things' that's the answer.

Yes, indeed! Mr. Johnston has struck the keynote of business and given us the measure of its social vision. Now, let the orchestra loose full blast with a cacophonous niagara of postwar drivel. Away with all dissenters. We'll have no talk about fundamentals. We'll suffer no ideas about how to organize America's Great Technology along scientific lines. We are not interested in distribution.

Did some one say something about the General Welfare? Oh, Yeah! 'That's in the Constitution, ain't it?' O.K. we'll get around to that later. Right now we're busy with postwar planning. What's that you said? The war isn't over yet? We know, but we can't lose, can we? Didn't we win last time? Or did we? Shades of the Fourteen Points and the League of Nations. Away with yon ghost! 'There ain't no such animal.' The Price System can't collapse. It never happened before, did it?

Aren't we busy as all get-out designing 'new kinds of things' for 'His

Majesty, the American Citizen'? Yes, sir, don't talk to us about fundamentals. It won't do any good to yap about satisfying the age-old needs of mankind for the age-old things they never had enough of before, such as abundance, distribution, security, leisure, equal opportunity and physical democracy. We're not in the market for that old stuff. Down with

the old; up with the new! Don't talk to us about the physical history of America. Don't try to scare us with the laws of physical science. We make the rules here. All God's chillun are going to get 'new kinds of things' in that glistening, glorious era just around the corner. Heil! Halleluliah! Free Enterprise Forever!

WHAT ELSE DO YOU EXPECT?

Out of every 40 adults in the United States, 14 managed to complete their grade school education, 6 managed to get through a high school course, and only 2 managed to complete a College Course. Was this because they could not survive the rigors of higher learning? it was not!

The only bar to learning in these United States is lack of purchasing power. If you don't have the 'price' you don't get the learning. 'Compulsory education' seems to be lacking in both compulsion and education, when only 14 adults out of every 40 in the year 1943 managed to complete the minimum amount of education. (Source of figures from the *Chicago Sun*, Sept. 17, 1943)

'Establishments violating child labor laws have increased 200 percent since 1941. The public does not know that we have solved the labor supply problem in the home front as much by the employment of children as by that of older men and women. One out of four children between 14 and 18 years is now gainfully employed. This has had repercussions on the educational system and is tied up with the delinquency problem, as is also the absence from the home of working mothers.'—L. Metcalf Walling, administrator of the Wage, Hour and Public Contract Division of the U. S. Department of Labor, as reported in the *Chicago Daily News*, May 5, 1944.

Every year farm accidents rob this nation of 20,000 lives and millions of hours of productive farm labor. Around 2,000,000 farm people are injured by accidents each year.—U.S.D.A. Broadcast, July 22, 1944.

'Over one half of Detroit's manpower pool is working on ordnance orders. In the event of alteration of the European military situation, there would be almost an immediate release of large blocks of workers.'—*Iron Age* December 23, 1943.

'The great struggle between economic forces which is going on behind our armies in the field is not a struggle for profit—it is a struggle for domination after the war—New light metals, new forms of transportation, new techniques, may make vast investments obsolete—and so the cartel leaders are gathering from all parts of the world to protect their system of *high prices and low turnover, restricted production and controlled markets—domestic and foreign—*against the new enterprise that is coming after the war.' Thurman Arnold, in *Los Angeles Times* 6/10/43.

ALAS! THREE-LITTLE BECAME THREE BIG HUGS





Photo: Courtesy Anheuser Busch

Opinions (philosophy) or measurement (facts)? That is the great question of this age. When granddaddy was in his prime, the age of opinion was in flower. All America enjoyed a free ride on the expanding growth curve of technology for about 150 years. We came to think that our opinions had something to do with it. That delusion will soon be rectified. Today's problems won't yield to debates around a pot-bellied stove in a general store. Look back at the past in this picture; it's gone for good.



Soil Conservation Service Photo

Here is another scene that will soon be in limbo also. King Cotton's tyranny over 2,000,000 tenant families of the South is coming to an early end. His scepter is falling to technology. One cotton picking machine displaces 50 to 75 workers. Are we prepared to cope with this social problem? Not unless we give up our opinions and measure the facts. The coming reign of technology will be much easier on the human components involved than was the ages long tyranny of human toil in the past.



U. S. Forest Service Photo

Here is something memorable accomplished by the unrestricted exercise of opinions. Timber cut or destroyed in 1943 was 50 percent more than total growth. The volume of standing saw timber in the U. S. has been reduced by 40 percent in the last 30 years. The 'right' of 'free enterprise' to denude the nation's forests is intimately related to our disappearing top soil and to the diminishing quantities of available fresh water in many communities. Waste not, profit not. That's good business in our time.



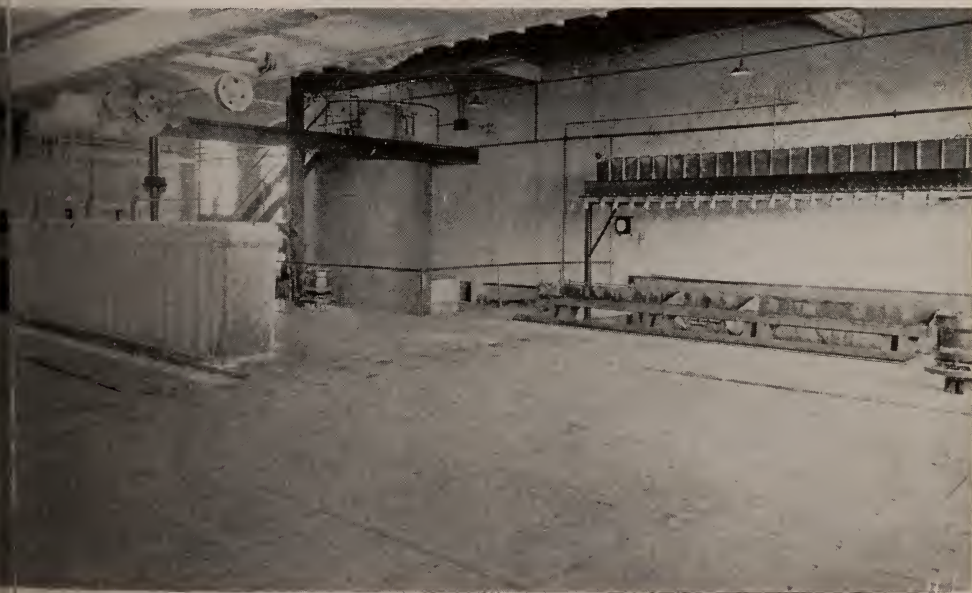
U. S. Forest Service Photo

Modern industry depends on water. The Water Resources Branch of U. S. Geological Survey is calling attention to the falling underground water table; the Forest Service points to our disappearing forest; the Soil Conservation Service complains about land erosion. But, 'free enterprise' continues to sabotage the nation's future economic life. This scene shows what can be done in proper cutting and reforestation. Opinions or facts; philosophy or measurement; deserts or fertility take your choice.



Photo: Courtesy Houdaille-Hershey Corporation

The ice harvest of yesterday was characterized by human toil and hand tools. In 1943, 11,000,000 American homes used 9,000,000 tons of ice. Industry used 31,000,000 tons. The old method is inadequate today. The first ice making plant was built in New Orleans in 1868. In 1942 the industry employed a peak of 150,000 workers. It used energy equivalent to 1,380,000,000 workers, or 138,000,000 horsepower. Payrolls represented 48.28 percent of all operating costs; power supplies only 10.4 percent.



Courtesy of York Ice Machinery Corporation, York, Pa.

The ice harvest of today goes on all the year around. America's 6,500 ice plants have a daily capacity of 98,000 tons of ice. Operating at less than 40 percent of capacity in 1943 they produced 40,000,000 tons. Some items used are: over 70,000 motor trucks and cars; 83,000 electric motors; 12,000 ammonia compressors; 360,000,000 pounds of salt and calcium; 15,000,000 pounds of ammonia; 21,000 miles of pipe, etc. Total installed horsepower of primary and secondary movers is over 1,000,000.



Signal Corps Photo
'Perplexed no more with human or divine, Tomorrow's tangle to the winds resign.' Thus opined Omar Khayyam, the astronomer-poet of Persia, over 800 years ago. Nothing much has changed in that country since then. It is still a land of human toil and hand tools, plus plenty of opinions. Here, laborers of the Persian Gulf Command, U. S. Army, unload American flour on its way to Russia under Lend-Lease. U. S. Army operates the Iranian R.R. between the Persian gulf and Soviet supply depots in the North.



Photo: Courtesy Jaeger Machine Company

Here's the American way to handle material. One man operating this shop and yard crane can move up to 5 tons at speeds up to 12 miles per hour. The crane carries, pushes, pulls, places or stacks any type of material. Its 12 to 18 foot long boom can be equipped with a 1½ yard bucket for moving dirt, etc.; or with a magnet for loading scrap. The load is centered on the driven wheels giving greatest stability and traction. No guesswork here; no opinions; it's all measurement. Design is its essence.



Photo: Courtesy Ingalls Iron Works Company Inc.

Here is one version of the Sea Mule, highly maneuverable, fast and easy to operate. It has the power of a steam or Diesel tugboat four times its size, but needs a crew of only two men instead of six. It is a flat bottomed 40 foot long, 15 foot wide, 6 foot draft, 572 h.p. gasoline powered, twin screw, heavy steel, all-welded work boat. Prefabricated, it is built and shipped in two sections and can be either bolted or welded together at point of use. In light traffic one man can handle the Sea Mule.

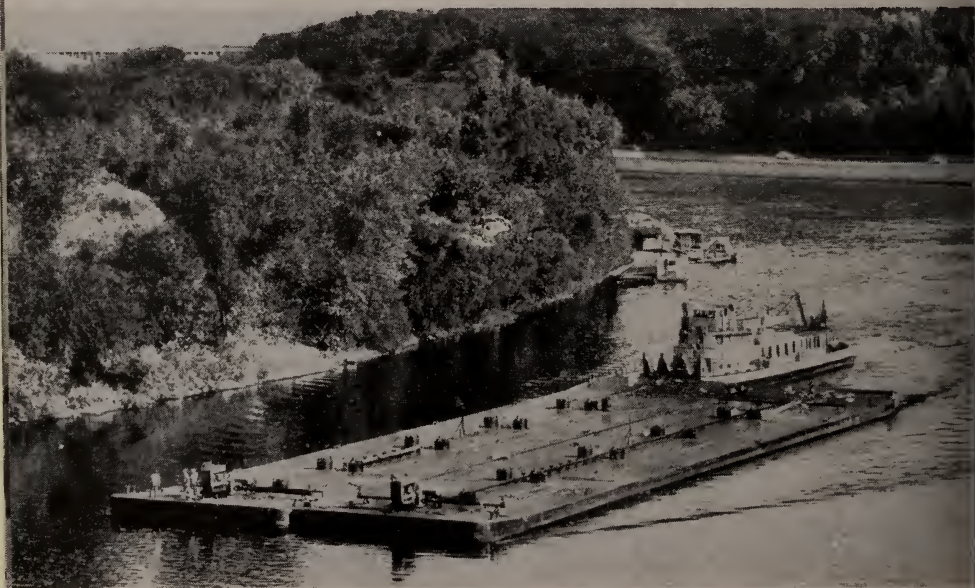


Photo: Courtesy The Pure Oil Company

The Anker L. Christey towboat pushing two oil barges around a bend in the upper Mississippi. It is a 108 foot long, 30 foot wide, V-bottomed, triple screw, 1200 h.p. Diesel boat, with a crew of 12 men. Tow load is 32,000 barrels of gasoline at a land speed of 9.21 m.p.h. It has hydraulic, single lever control of engines and rudders. Waterways are the most economical means of transportation for bulk freight. For a scientific discussion of its possibilities see A-17 Technocracy magazine, October 1939.



Photo: Courtesy The Eimco Corporation

'And I learned about minin' from that.' Here is the Rocker Shovel, powered either by compressed air or electricity. It has a one-half yard bucket. The operation is an overhead arm action that throws the rock into the loading car behind. This model with one man tending it will load up to 5 tons per minute. A husky mucker with a shovel is good if he can muck 4 tons per hour. From the neck on down a man is worth about 1/10th of a horsepower. As measurement proceeds, the validity of opinions declines. See?



Photo: Courtesy The American Brass Company

Here is a splendid example of measurement, the Extensometer. Tensile strength, elongation, yield strength and other data of copper alloys are determined by this precision tension testing machine. Note the attendant's attitudes. There's no guesswork or opinions here. Facts dictate. It's just about time this attitude was carried over into the field of social problems. Their complexity and magnitude today invalidates opinions and philosophy, and demands the scientific approach.



Official U. S. Army Photo

Caterpillar D-8 bulldozer with armored cab, filling up a shell crater. These are used in close proximity to actual fighting. Opinions may have held that armored cabs were an unnecessary luxury for bulldozer operators. Perhaps many had to die before the facts dictated otherwise. In war or postwar America the problem is the same. Opinions are becoming too costly a luxury. Observation, research and experiment must replace a priori reason, logic and discussion. Let's find the facts. Let them decide.



Official Photo U. S. Air Force

A waterproofed jeep undergoing tests in a stream. The jeep was not waterproofed with anybody's opinions, but with an asbestos compound applied to vital parts. There is a formula ready for protecting America's social structure against postwar collapse. It was compounded from a physical appraisal of American history and a scientific analysis of her social problems. The formula is Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None.

And the Blind Shall See

DIALOGUE ON AMERICA

by Lilly Yngve

Time: Now.

Scene: Any old home town in America. The only specifications are that there must be a house on the edge of town. It fronts on a fresh water lake, just wide enough so that the further shore is dimly visible. A line of hills rears up on the distant side. To the back of the house is a cornfield and a cow pasture. On the front lawn, stretching from the house down to the shore, is a grove of pine trees.

A convalescing American soldier is resting in a hammock stretched between two trees. He has just awakened from a nap and is gazing lazily at his surroundings. It is early afternoon. Here and there, a motor boat scoots along far out on the lake, with exhausts echoing sharply. White patches over the water mark the sails of catboats tacking along more slowly with the wind. Closer in to shore a few hopeful fishermen loiter in rowboats. A squirrel clambers up a nearby tree trunk, peering inquisitively at the soldier. Suddenly, from out of nowhere, a dog rushes up to the hammock and starts barking and jumping around. A smile comes over the soldier's face and he sits up in the hammock. Then a voice calls out from the other side of the lawn:

Here, Whitey, you scoundrel, now you woke him up! Sorry, Arthur, the leash slipped out of my hand and that dog of yours made a beeline for the hammock. I couldn't help it.

Art: No harm done, Jim, I couldn't sleep much anyway. I don't want to waste my time taking afternoon naps anymore. There is so much to see and enjoy.

Jim: You better behave and get your sleep; them's Doctor's orders, my boy.

Art: To hell with that! I've got my strength back, most of it, anyhow, and I'm learning to walk rather well, if I do say so myself.

Jim: You're doing fine, but take it easy, fellow. That was no caress you got from that 20 mm. shell.

Art: I admit that, and parachuting into the cold North Sea with my left leg shot up was no picnic. I was more dead than alive when that British patrol boat picked me up.

But it doesn't bother me anymore. I'm perfectly calm and quite willing to go up in a plane again.

Jim: You're going to stay right here by the lake and rest. Just get the scent of these pines; and do you notice the blue of the distant hills across the lake. Behold behind you the fields of corn swaying in the

wind, and the cattle grazing in the pasture, and forget about airplanes for a while.

Art: I'm taking it all in, Jim; and that's why I want to fly again.

Jim: I don't understand what you're driving at.

Art, making a wide sweep with his arm: This is a part of America, your country and my country. I traveled a great many miles and saw a large portion of this Continent before I got back to this spot we call home. I had plenty of time on the journey to observe, read and think.

We passed through industrial centers where the world's finest physical equipment is gathered. I saw a huge dam with a hydroelectric installation that generates power used many miles away in the industrial centers.

I was greatly impressed as our train virtually plowed for hundreds of miles through a vast sea of wheat and corn. A fellow passenger informed me that our temperate zone grows one-half of the wheat and three-fifths of the corn in the world. He showed me a picture of a cotton-picking machine in a magazine, and pointed out that the 'contraption,' as he called it, displaced the labor of 70 men.

We've just about got everything on this Continent, Jim, even tropical stuff. Right in our own backyard we have plenty of tea, coffee, sugar, bananas, cocoa, chicle, rubber and a mess of other things. Do you know that the Quinine bush grows wild in Peru, Colombia, Ecuador and Bolivia?

There is no reason why our women who want silk stockings should not have them, because the silk worms can be cultivated in Mexico, the Central American Plateaus and even north as far as the Great Salt Lake. Four hundred and twenty-four million acres of our land grows hardwood. Think of it! I haven't told you about the great herds of cattle grazing on our western plains; and how much oil we produce and of the minerals, and I haven't mentioned that land far up North, waiting to pour out its horn of plenty. I mean Alaska, with a wealth of resources yet untapped. And now do you see what I'm driving at, Jim, and why I want to fly again? WE, the people of the North American Continent, have got something here, something worthy of defending. All this is mine and yours, and every citizen's, and the heritage of our children.

Jim: You're damn right, brother, it's magnificent; but you are not going up in any old hunk o' junk again, if I can prevent it.

Art (turning red in the face): Hunk o' junk! Ye Gods, man! You are not by any chance referring to my Flying Fortress 'Bold Eagle,' that saw me through so many missions over enemy territory.

Jim: I'm not joking. I've listened to you with great interest. You have learned your lesson the hard way. I mean, to appreciate America, the beautiful, and to see her potentialities. But you still haven't learned enough! You admire our technology. You have thrilled at the controls of your Fortress. All well and good.

As a test pilot, I've handled some pretty nifty numbers myself. But I'm not satisfied with what we are doing, because I know how much better we can do when we quit using hand tools and human toil and really get down to applying technology.

Art: We're doing fine, I think. At least, you'll have to admit we're doing much better than the other side.

Jim: Yes, that's correct, but we're doing it the hard and expensive way, the Price System way.

Art: Well, we have to work with what we have, Price System, or no Price System.

Jim: Correct again, my fast learning brother. The point is, we're not using what we already have because of Price System interference. We're operating far below our real capacity and skill. Here, I want to show you these two leaflets as evidence.

Art (reading aloud): Technocracy urges Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None. What's this? What does it mean?

Jim: It means just what it says that we Unite and Operate all our physical equipment in all the industrial areas on a non-profit basis. It means putting agriculture on a scientific basis, which will increase its output at least 50 percent, on far less acreage. It means utilizing our natural resources in an intelligent manner, that is, without waste and with an eye toward the future. It means the freezing of our monetary system of price and value for the duration

and for six months after the war is over. It means winning the war in the shortest possible time at the lowest possible cost. Total Conscription will also assure a peace without disaster on the home front because it will liquidate pro-fascism at home. Another thing that might interest you, my dear Mr. Aviator, is this. Total Conscription will free aviation from the Price System shackles which are retarding its development and as I mentioned before, you won't have to go up in anything but the best that technology can devise. In other words, the planes we are using today are not worthy representatives of this scientific age.

Art (bristling with indignation): Not worthy representatives! What are you talking about? Why, the P-47 rolled off the assembly line like nobody's business and was delivered where they were most needed in two shakes of a cat's tail. And now the wings are mounted and all eight machines guns boresighted even before the wings are attached to the fuselage. This is a great step forward, believe me. Furthermore, the P-47 is a qualified, high altitude fighter, dive bomber and hedge-hopping strafing. Its range has been increased from 315 to more than 400 miles per hour. The whole plane has been streamlined, no ridgepoles or window frames obstruct the view in the new 'bubble canopy' and the flat bullet proof wind shield allows for better forward vision.

And here you talk as if we are old-fashioned as hell. We've increased our armament and bombloads from

time to time, and do you know that the USAAF dropped about a million tons of bombs on axis territories from Pearl Harbor through 1944.

Jim: Not bad! After all, one cannot expect too much of the old Price System, but what a waste of time!

Art: Waste of time! Man! Don't you realize that we have had such things as submarine infested oceans, mountains, jungles and lack of roads to contend with when transporting war equipment and materiel to our fighting forces, thousands of miles away?

Jim: Yes, I realize all that, and I know what an enormous task confronted our forces in China, how they had to wait and wait for the supplies to come through. They won their victories the hard way. The transportation problem could have been and can still be made very simple by utilizing our technology to its fullest extent. This can be done by producing gigantic bombers which can also be converted into freighters of the sky by removing the bomb-racks.

I am referring to Technocracy's Flying Wing Bomber. Ever hear of it?

Art: No; what's it like?

Jim: There is a picture of it on this leaflet.

Art: Hm; 12,000 miles; ceiling 35-40,000 feet; wingspread 330 feet; speed over 300 miles per hour; bombload 50 tons. Boy! That's a plane!

Jim: You bet. All we need is 24,000 Flying Wings which would provide a fleet, consisting of 1,100

bombers for each of the main bases surrounding this Continent. A single Fleet would carry a bombload of 55,000 tons, or 110,000 half-ton bombs.

Six fleets from one coast, leaving the others in reserve, would consist of 6,600 planes, carrying 330,000 tons of bombs. You mentioned that the USAAF dropped 1,000,000 tons on axis territories from Pearl Harbor through 1944. Well, six fleets of Flying Wings could drop 1,320,000 tons of bombs in four missions, each trip taking not more than 40 hours. So, in approximately 160 hours, or less than a week, the Flying Wings would drop more than what our present type of planes have done in about three years.

Art: I'm absolutely flabbergasted. Why, it seems impossible! But I imagine that it would take years to build these giants.

Jim: Not at all. The Flying Wing is designed for mass production, utilizing plastics to a great extent. No rivets or hand methods would enter into its construction. They would roll off the assembly line at unprecedented speed. All machinery and facilities are within the aerodynamically designed wing itself. As you notice, there is no fuselage.

Art: What kind of propellers will she use?

Jim: Pusher type, eight of them, with two on each shaft, and it will be powered by huge multimotors. These Flying Wings are independent of an escort because they would be heavily armed and have many

times the fire power of the Fortress or any other bomber. An enemy plane would be blown to smithereens before it came within its own range.

Art: You say that it can carry 50 tons of bombs. How many men would it hold?

Jim: Three hundred fully equipped men, or two 25 ton tanks, can be transported over a distance of 6,000 miles in about 20 hours. The Wing can then return to its base without refueling. Distance to any part of the world is not figured in miles any more, but in hours. Now, do you understand what I meant by waste of time, a while ago?

Art: I give in. It's difficult for me to visualize even one fleet of these enormous Flying Wings. A city like Berlin, Rome or Tokyo would be no more after one single raid. How long could the fascist world continue such a fight against America? They just couldn't.

Jim: When these bombers are built, the war will be won more quickly, with less cost and, last but not least, thousands of lives will be saved. America must lead and not follow in the science of aeronautics. Technocracy presents these specifications of the Flying Wing Bomber for the security of America. Total Conscription opens wide the door of technology and sweeps pressure groups, vested interests and internal fascist sabotage out of the way.

Art (getting up and extending his hand): I'm one hundred percent for Total Conscription of Men, Machines, Materiel and Money, with National Service for All and Profit to None.

The two men walked slowly towards the house, Jim helping his brother up the stairs to the front porch.

At the door, Art turned around and looked back toward the lake and the distant hills.

More to himself than to Jim, he exclaimed:

'Now, I know what that sentence meant in one of those Technocracy magazines you sent me.'

'What sentence was that, Art?' replied Jim, softly.

Looking off in the distance, Art recited from memory: 'America is the number one technological potential of the world; and the aspirations of human society on this Continent must be the projection of the technological pattern of this Area.'

'It's as clear as day now. America is not politics, it's not business, it's not ecclesiasticism, It's not flag waving, it's not the Price System, it's not doing things the old, hard way by human toil and hand tools.

'America is the structure of a new society within the shell of the old, imported European social system. America is Science and Technology. It's a new order of the Ages, a new civilization struggling to be born.'

'That's it, exactly,' said Jim, as he opened the door.

Far out on the lake, the rapid pop, pop, pop of a motor boat with wide open exhaust echoed sharply across the water. The sounds put a series of fitting periods to the scene as the two men entered the house.

Business First

Reprinted by Permission from *American Lumberman Magazine*, May 27, 1944
(Title and Italics Ours)

We believe that lumber for the Army and Navy, lumber needed by those forces to carry on vitally necessary operations against our enemies, should be supplied immediately *after* certain *other needs* for lumber have been satisfied. Chief among these *other needs* is shelter for horses at race tracks, and canopies over country club swimming pools.

We have urged consistently in connection with lumber use in time of war that first needs comes first, and while it is important to supply our armed forces with the lumber necessary to carry on military operations against our enemies, no one will doubt the *primary essentiality* of continuing horse racing at the usual high standards. And no one can doubt the equal essentiality of shelter from the piercing rays of the summer sun for war weary pool bathers. What will it avail us to win the war *at the price* of some slackening in the horse racing business, or at the price of keeping pool bathers out of the pools on hot, sunny days. Nothing, of course. Our first duty is to keep things running pleasantly and smoothly at home, even if such activity does require an occasional few hundred thousand feet of lumber the Army and Navy are crying for.

A few days ago we were happy to note the activity at the Washington Park Jockey Club near Chicago. The

ends of two stable buildings had been detached and moved about 150 feet out. Lumber, new lumber, was being delivered and piled for what looked like two 150-foot extensions of stable buildings approximately 30 to 40 feet wide. Then, there were some stakes nearby indicating that perhaps two new stable buildings about 200 feet long were to be built. We hope the evidence reflects our deductions. We also heard that bids would be received soon to put a canopy or shelter for bathers at the pool of a Chicago golf club. We hope that goes ahead.

After all, Colonel Sherrill and Lt. Comm. Kellogg are only several hundred million feet behind in their lumber requirements for the impending battle of Europe, and the Jockey Club probably will need *only* 500,000 feet of lumber to keep the horses running.

It will take quite a few projects such as this seems to be to equal the Army and Navy needs. *At most that half million feet can require the lives of only a few dozen American boys.*

And anyway, who wouldn't prefer to be a happy Nazi slave rather than a free American forced to bathe in the sun, and with limitations on horse racing. Or *is* the war over?

A statistician is a man who draws a mathematically precise line from an unwarranted assumption to a foregone conclusion.

Primer of Technocracy

by Education Division 8741-1

After having given but the briefest outline of the methods of Technocracy, analysis and synthesis, we now take up a short illustration of the operations of Technocracy. This series began a year ago. There is enough material available to continue it indefinitely. The Body of Thought of Technocracy is the fastest growing branch on the great, spreading tree of science. Technocracy touches almost all phases of modern life somewhere.

Operations of Technocracy

The analogy between science and Technocracy carries through from analysis to synthesis to operations. This last step in the methods of Technocracy is the application of the principles contained in the synthesis, on the basis of probability. This is an accurate reflection of the dynamic side of science. When any individual or organization is confronted with a problem, it is necessary to employ the scientific method for maximum results. This involves three steps as has been shown. First, one examines the elements of the problem, or finds the facts. This precedes everything else. Next, it is necessary to synthesize and interpret the facts, including the elaboration of principles and conclusions. Up to this point, we have merely been making decisions building up to our solution. Finally,

it is necessary if one is to solve the problem to act upon the basis of the conclusions and principles. In other words, it is not enough to study and know; one must also do. The object of knowledge is action. The application of the scientific method to the phenomena of the physical world has resulted in the body of verifiable knowledge called science. This application of this verifiable knowledge, by means of the scientific method, to the problem of man's relation to the physical world from which the knowledge was obtained will result in a solution of his social problems. This is the great contribution of Technocracy.

Most of the primary inventions of the first stage of the industrial revolution were effected by trial and error or hit and miss, mixed with a dash of the scientific method. But today the great advances of science are being made by those individuals and institutions using the disciplined methods of science. This is just as true in the social field as anywhere else. Witness the great number of trial and error political plans, and hit and miss social panaceas that have fallen by the wayside in the past. This should be enough to convince any one that no moral wave of protest, no emotional upsurge of humanity, no socio-economic political nostrums can solve America's problems. They are antithetical to the scientific method.

Technocracy Inc. is not that kind of an organization. It didn't just grow up like Topsy. It was carefully designed by the originators of the Body of Thought of Technocracy. Just how carefully it was designed we will presently see. The primary function of the organization is to transmit the principles of Technocracy to the American people. Thus, we see that the organization of Technocracy is the operational part of its methods. From this it follows that Technocracy as a whole is the instrument of the social aspect of science as a whole. It can lay claim to that distinction because it is the only movement in America designed to function in that way. That is why and where Technocracy and its organization differs from every other social movement and Price System organization in existence. Many interesting sequelae follow from this uniqueness.

The analogy between the threefold nature and methods of science and their accurate reflection in Technocracy extends even into the structure and the internal mechanism of the organization. This may sound incredible at first. Actually, it is an integral and necessary part of the whole design. The parallel in the mechanism of the organization with the analytic, synthetic and operational steps of the methods of science and Technocracy is illustrated by the functions assigned to the seven standing Committees with which each Section, or local unit, of Technocracy, is staffed. These Committees: (a) New Membership; (b) Educa-

tion; (c) Research; (d) Finance; (e) Speakers; (f) Publications; and (g) Organization. Now, let's see how these Committees parallel the characteristics and methods of science and Technocracy. The primary characteristics of science and Technocracy is the step of analysis. This is reflected in the Research Committee which is charged with collecting information, statistics and data for the use of the organization. The potential characteristic of science and Technocracy, which is the step of synthesis, is reflected in the Education and New Membership Committees. The Education Committee conducts Study Classes to instill a working knowledge of science and Technocracy into members. The New Membership Committee is charged with inducting and integrating new members into the mechanism of the organization. Both of these functions are clearly synthetic, since up to this point the member is not yet ready for the final baptism of action in the outside activities of the organization. This is where the Public Speaking, Publications, Organization and Finance Committees come in. They represent the operational characteristics and methods of science and Technocracy, for they actually transmit Technocracy directly to the body of people outside of the organization. This is accomplished by public lectures and home meetings, by contributions to Technocracy literature and by effecting a wider distribution of that literature, and by articles and letters to the Price System press; by organizational activities in new areas,

and by social affairs and person to person communication.

It is not strange that the designers of the Organization set up four out of seven committees to carry out the operational step of Technocracy. It would be strange if the emphasis were not placed on action. Of course, all seven standing committees engage

in analysis, synthesis and operations triply in their internal functioning. This classification is based upon their predominant characteristics as units of the threefold method of Technocracy.

Next Issue: All voluntary and racket proof.

THERE IS A SURE WAY OUT

'Most of us think of free enterprise as a system in which prices are set by competition and the law of supply and demand. Unfortunately, before the war this concept was true in only part of our economy. In too many industries prices were held up artificially in order to provide higher unit profits. Because of this policy in some industries full production and employment were curbed. . . . Before the war few of us realized the tremendous productive power of our American economy. The fact that this miracle of production has been achieved during wartime will have a significant influence on our peacetime industrial planning. It is unlikely after the war that our people, including our 11,000,000 returning service men, will long tolerate any economic system which does not provide reasonably full production with reasonably full employment at a high standard of wages and farm income. As a practical matter, we cannot go back to the production levels of 1940. The Department of Commerce recently estimated that if in 1946 we were to go back to 1940 total production at 1940 hours of labor there would be 19,000,000 unemployed. . . . Such an economic reversal would mean shrinking markets and falling prices for farm products as well as the products of our factories. It would mean that our farmers, our workers, and our returning soldiers would again have to compete bitterly with each other for their frugal individual shares of economic scarcity.'—Chester Bowles, OPA Administrator, in a Memorandum to all Members of OPA Advisory Committees, dated October, 1944.

'If postwar plans were to be followed by each company engaged in war production, it is estimated by some sources that 20,000,000 persons will be thrown out of work. At the height of the depression between 14 and 15 million persons were without steady work. If peace brings us 20,000,000 unemployed, even including millions of women who never worked in factories before the war, I shudder to think of the abyss into which this country will plunge, should this period of unemployment be long lasting.'

—Col. Willard F. Rockwell, chairman of the board, *Timken-Detroit Axle Co.*, *Standard Steel Spring Co.*, *Pittsburgh Equitable Meter Co.*, and *Hupp Motor Car Corp.* From his article 'Is Peace to Bring Us 20,000,000 Unemployed?' in Aug. 1944, *Marine News* magazine.

'Unless an economic substitute is found for war contracts, mass unemployment will become a serious threat and the number of unemployed men and women in this country could easily surpass anything that was dreamed of during the last depression.'

—Extract from report of the War Contract Subcommittee of the Senate Committee on Military Affairs in support of the so-called 'Full Employment' Bill.

The energy available from America's current output of petroleum is equivalent to the work of four and one-half billion men laboring eight hours a day, six days a week, or two-and-a-half times the population of the earth on an ordinary shift. (From Science Digest, November 1944)

Technology Marches On!

As Sure as the Sun Rises
by Research Division 8741-1

Resources

Tin has been discovered in the Duncan River area of British Columbia. About 3,000 pounds is already produced daily at Kimberly, B. C. (*The Mining Record*, November 16, 1944). *Ed. Note:* When will they 'discover' the large deposit of tin in Harney County, Oregon. See *Technocrat* magazine, August and September 1941.

Materials Handling

Materials are worked only 35 to 40 percent of the time with 60 to 65 percent of all manufacturing time devoted to handling operations. Six men worked 9 hours each to unload and store a carload of lumber. Now, with a lift truck, one man does the job in 8 hours. Net saving is 48 man-hours of labor. (*Industrial Truck Statistical Association*, July 22, 1944) *Ed. Note:* See *Man-Hours and Distribution*, page 16, last paragraph.

Measuring Time

An electronic chronoscope has been perfected by Dr. Frederick W. Brown and Carrol R. Nisewanger, two physicists at the Pittsburg office of the U. S. Bureau of Mines. The instrument measures time intervals 250,000 times shorter than the blink of an eye. It is portable, for field tests, and an unskilled operator can learn to use it in an hour. The

chronoscope is used to measure the velocities of seismic waves in solids, liquids and gases and other operations where infinitesimal fractions of seconds are of the essence. (U. S. Department of The Interior, November 29, 1944). *Ed. Note:* See *Science and Society*, page 22, last paragraph.

Electronic Gun Locator

U. S. Artillery uses a sound measuring system for locating the exact position of enemy guns miles away. It also permits adjustment of our shell fire to coincide with the position of the enemy gun. A half dozen sound ranging microphones are set up at intervals of 2,000 yards. These are connected to the central station by wire or radio. The signal (enemy gunfire) is picked up by the microphones and sent to the central station where it is recorded photographically by an oscillograph. The position of the enemy gun is determined by geometric calculations of the differences in time of arrival of the signal at the six microphones. Deviations of the sound waves due to atmospheric conditions are corrected by meteorological techniques.

(*Radio-Craft*, January 1945) *Ed. Note:* See *Technocracy Magazine*, Series A, No. 13, page 4, second to last paragraph, first column.

Rockets

The U. S. Navy's new LCT(R)

landing craft, tank, rocket ship has two and a half times the fire power of a 45,000 ton battleship. It carries three types of rockets; the high explosive type, of which a 5 inch rocket has the explosive power of a 155 mm shell; the incendiary type for starting fires and fixing the accuracy of the range; and a smoke rocket for screening troops. *Ed. Note:* See same reference in A-13 and next paragraph following.

Turbines

The Pennsylvania Railroad has announced completion of a coal burning steam turbine passenger locomotive. Power is delivered to the wheels by gears. It is said that 97 percent of the turbine's output reaches the driving wheels. Advantages of the turbine locomotive over the conventional type with cylinders, pistons and driving rods, comes about as a result of the elimination of reciprocating parts, very low track wear due to a smooth flow of power and *general operating economies*. (*Cleveland Plain Dealer*, November 29, 1944. *Ed. Note:* See *Introduction to Technocracy*, page 24, second paragraph.

Laundry

The U. S. Army's Medical Department has developed a process for doing laundry with sea water. The process will be introduced for use on troop and hospital ships. A recent test on a hospital ship showed a saving of 4,480 gallons of fresh water a day. There was a reduction in the linen inventory ordinarily carried of from 30,000 bedsheets to

8,700, or total reduction of 21,300 sheets. This left room for 4 more bed cases and 10 more ambulatory cases than the ship could ordinarily carry; not to mention the space saved through reducing the bulk of fresh water necessary at sea. (*Ships magazine*, November 1944). *Ed. Note:* See *Technocracy Study Course*, page 103, second paragraph.

Man-Hours of Labor

'In 1944 it required exactly one twentieth as many man-hours to build one of these planes (Douglas A-20) as in 1940.' Pounds of airplane per working employee per year rose from 490 in 1940 to 2,900 in 1944. (*Douglas Airview*, November 1944)

American factories delivered 96,369 planes of all types in 1944. This is an increase of 11,423 planes over the output of 1943. Figuring by weight it is an increase of 50 percent. Since July 1940, 243,256 planes have been produced. (*Chicago Daily News*, January 4, 1945) *Ed. Note:* See *Man-Hours and Distribution*, page 10, paragraph three.

Canada

The National Research Council of Canada at Ottawa has announced several new developments. Among these are a method for coating airplane windshields to keep them clear of ice. The process is based on the law of electrical polarity that like charges repel each other. Briefly, every particle of matter in the universe carries a charge of electricity, either positive or negative. The ma-

terial in question is applied to the windshield. It carries the same charge as raindrops. When rain strikes the windshield, it is repelled so energetically as to 'explode,' leaving the glass clear.

Another spectacular job of the Research Council is the utilization of hydroponics, growing vegetables in tanks of chemically treated water, to bring fresh vegetables to troops and essential workers in the frozen wastes of the far north. (*Chicago Daily News*, December 8, 1944).

'Canada's radio and electrical communication equipment (production) has grown in volume in 1944 to \$200 millions, as compared to \$16 millions in prewar years. . . . Average daily production of plants throughout Canada includes 200 transmitter-receivers, 100 radio receivers, 25 radio transmitters, 300 miles of field cable, 200 charging sets, 50 generator sets, 100 amplifiers, etc.' (*Radio News*, January, 1945) *Ed. Note:* See *Technocracy A-19*, page 8, first paragraph.

Food Production

The United States Department of Agriculture, Office of Foreign Agricultural Relations, made a survey of world food production in 30 countries with 60 percent of the world's population. The survey covered 1942 and 1943 and included, among other comestibles, the output of edible oils, meat, poultry, eggs, dairy products, cereals, sugar, fruits and vegetables. Correct data were not available for Russia, China, British Malaya and the Netherlands Indies. It was stated that the indications were

that food production in those areas had declined considerably.

In Western Europe food production declined 6 percent. In the Middle East, it declined 5 percent. In Oceania and South Africa food output rose one percent. In Southern and Eastern Asia it rose 3 percent. In South America it rose 17 percent. But in North America food production for 1942-43 rose 30 percent. (U. S. D. A. release, December 3, 1944.) *Ed. Note:* The report does not add that this 30 percent increase in food production in North America was done on less acreage and with less farm workers. See *A Thermodynamic Interpretation of Social Phenomena* by Howard Scott, page 32, paragraph three.

Birth Certificate

The first patent granted on the North American Continent was handed down by the court 200 years ago. The patent was granted to Joseph Jenks who had settled at Lynn, Mass., in 1643. Here is the exact language (*italics ours*):

'At a generall Courte at Boston the 3th m 1646

'The Co't consid'inge ye necessity of raising such manufactures of engins of mills to go by water for speedy dispatch of much worke with few hands . . . grant his petition . . . & so as it shalbe alwayes in ye pow' of this Co'te to restrain ye exportation of such manufactures . . . if occasion so require.'

(From *New York Journal of Com-*

merce, March 11, 1943.) *Ed. Note:* See *Introduction to Technocracy*, page 14, last paragraph.

Free Power?

Under the title 'Low Cost Power—To Win the War Now—And Then the Peace,' the Cooper-Bessemer Corp. recently advertised in trade magazines that it has 'Power Plants That Never Buy Fuel.' Under a picture of a typical sewage disposal plant, the following statements were made:

This is a story that hits right at the pocket-book of John Q. Public—the story of a fuel and power source wasted in hundreds of American communities. . . . For 18 years . . . engineers have known that modern sewage treatment plants generate millions of cubic feet of inflammable hydro-carbon gases every day. Already in 80 cities this sludge gas drives big internal combustion engines, which are

connected to pumps, blowers, generators, and other necessary plant equipment. Thousands of dollars are saved annually. . . . (in) cities like Cleveland, Madison, Atlanta, Gary and Hammond, etc. . . . and these tax-saving engines are available now for the 1,000 U. S. cities wasting (this source of) power.'

As long ago as April, 1938, it was pointed out in *A-11 Technocracy Magazine*, in an article 'Power Development from Recurrent Resources,' by A. DeLisle (a Technocrat), that the entire sewage disposal systems of American cities can be used for power through the methane gas generated naturally by sewage.

The advantages to Americans lies in the fact that by using recurrent energy sources, such as sewage gas, grain alcohol fuel, and waterpower, we need to mine and transport that much less coal and oil, conserving it for the next Americans.

PAGE EMILY POST

In Cedarhurst, Long Island, a war plant is operating on a strictly non-profit basis. It is a mica processing center. 'All tools and equipment are donated, and the finished product is shipped to Colonial Mica Corporation, an R.F.C. subsidiary.' U. S. Mica Commissioner M. D. Heyman arranged for the raw material. Members of the American Women's Voluntary Service work the afternoon shift. After the demands of the Price System have been met, citizens of the town take over the night shift. 'Farm laborers, lawyers, doctors, judges—these are the "war workers" at this singular war plant whose operations afford a living example of the phrase 'democracy

at work.'—From *Dodge News*. Vol. 10, No. 4.

Ed. Note: What strange goings on, is this? We do not mean the highly commendable efforts of the townsfolk of Cedarhurst. We refer to the highly anomalous behavior of a slick paper, three color, house organ of corporate enterprise in extolling the activities of a non-profit enterprise. 'It just isn't done, you know.' Maybe it's the war. Maybe the editor was short of copy. On the other hand, maybe he suffers from periodic amnesia regarding the true function of a house organ of big business. In any event, ye editor had better watch his step or he may lose his soft, padded berth. Yea, verily!

Technocracy and Your Trade

THE FARM WORKER

by Organization Division 8741-1

'Ho, for the Life of a Farmer!'

In 1850, 71.4 per cent of the U. S. population lived on farms. In 1935 only 23 percent enjoyed that bucolic existence. By 1943 this number had dropped to 21.5 percent. The average number of persons employed in agriculture in 1909 was 12,209,000. In 1939 this had dropped to 10,629,000. In 1944 it was below 10,000,000. Taking 1939 as being 100, the output per farm worker was 66.3 percent in 1909. In 1942 it had risen to 119.6 percent. This illustrates one of the major facts of technology. The only way to produce more is to work less. How is it done?

In 1910 there were about 19,000,000 horses on American farms. The number rose to an all time peak in 1920 with about 23,000,000 work animals. By 1943 'Old Dobbin' had vanished to the extent that there were only 12,000,000 of his species still extant. His place was taken by tractors. In 1910 there were less than 100,000 tractors on all our farms. In 1943 there were about 2,000,000 in operation. This is only one phase of farm technology. As if in further certification of the visible advance of technology on the farm and the declining percentage of the population engaged in farming, the average size of farms has been growing greater ever since 1880. At that time

it was 134 acres. In 1935 it had risen to 155 acres per farm. The trend is toward larger and larger units in agriculture. It couldn't be otherwise, for technology can't be employed on small acreages.

The 1940 census of agriculture reveals the following. Farms smaller than 260 acres in size decreased in number by 694,781 between 1910 and 1940. Farms between 500 and 1,000 acres in size increased from 125,295 to 163,694 in number. Those above 1,000 acres in size more than doubled in number, from 50,135 to 100,531. In 1910 more land was included in the category of 100 to 260 acre farms than in all other sizes put together. By 1940 farms of over 1,000 acres in size comprised more than twice the amount of land in any of the other groups of farms.

The average size of all farms indicated as having risen from 134 acres to 155 acres between 1880 and 1935 does not give an accurate picture. In the total is included over a million 'subsistence' farms which, as a matter of fact, do not furnish even a bare subsistence to their operators. Half of all the farms in the U. S. produce about 89 percent of all the commercial food. The other half produce only 11 percent. In 1929 about 28 percent of all farms produced less than 4 percent of the

food consumed by their operators. Yes, Technology is definitely moving in on American agriculture. There is no use blaming the government. There is no use making a whipping boy out of Congress. Neither of these institutions can prevent the impact of technology.

In 1943 with 10 percent less farm workers than in 1918 and 2 percent less acreage technology produced 50 percent more food than in the latter year. The Department of Agriculture reports that in physical goods used in production, agriculture jumped from a \$49,000,000 industry to a \$70,000,000 industry between 1940 and 1944. But the same old story of Price System mal-distribution still holds good. Fifty percent of all farm families received only 18 percent of the total farm income in 1942; 40 percent of all farm families had an income of less than \$930.00; while the bottom 10 percent received less than \$130.00 per family. In 1942 the big land owners (biggest users of technology), constituting the top 1/10th of all farmers got 1/2 of the total farm income. The bottom 1/10th of all farmers got less than 1 percent. It pays to install technology. Below are some examples of recent farm technology.

Cane Harvester

The Louisiana sugar cane crop formerly required about 35,000 workers each season. In 1944 more than 350 mechanical harvesters were on the job doing the work formerly needing 21,360 hand laborers. One cane har-

vester can cut about 10 acres a day. Costs run between 15 cents and 25 cents a ton as compared to \$1.25 a ton for hand labor. How long do you suppose hand labor can compete against such odds?

Cotton Pickers

The Texas Cotton Association has been placing ads in papers and buying time on the radio to advise cotton farmers to plant cotton only on their most productive acres and to mechanize operations as much as possible. It is estimated that one mechanical cotton picker displaces 40 men. At present wage rates, it costs about \$30.00 to pick a 500 pound bale of cotton by hand. The mechanical picker cuts that cost to about \$1.00. Figuring amortization, overhead, depreciation and downgrading, caused by dirty cotton, the saving is at least \$20.00 a bale. There are about 9,000,000 people in the 2,000,000 tenant families of the cotton country. It was estimated by Dean Moberly, a cotton planter at Madison Parish, Louisiana, that 50,000 cotton machines would displace 2,000,000 workers.

International Harvester, John Deere, Allis-Chalmers, Graham Paige and other farm equipment manufacturers will turn out cotton pickers and fire spitting cultivators in volume as soon as possible after the war. It's on the books now. How long will it take them to produce, sell and install 50,000 cotton machines? 'Quicker than a cat can wink her eye' as the old song goes. And, then there's the up and coming rayon in-

dustry giving nightmares to old King Cotton. Yes, Sir, the cotton chopper will soon be in the slums of some more northerly urban center trying to find an answer to that eternal Price System question, 'How shall we live?'

Sugar Beets

Al Jongeneel, a sugar beet farmer in California's lower Sacramento valley, did something about the shortage of stoop labor to thin and harvest sugar beets. He built a beet harvesting machine. It does the work of 10 men. Al figures that it cuts the cost of harvesting from \$2.00 a ton to 20 cents a ton. As early as September, 1943, the government granted priorities for materials; and four big California sugar companies and large beet growers ordered 35 machines. The U. S. Sugar Beet Association has set aside \$200,000 to underwrite further research in agricultural colleges. More recently, on January 5, 1945, Douglas E. Scalley, vice-president and general manager of the Utah-Idaho Sugar Company, announced that beet processors planned to speed up mechanization of the industry's agriculture. 'Eliminating migratory labor in beet fields,' he said, 'is one of the objectives.' Is Mr. Scalley a villain? Not much, the villain is technology.

Corn Pickers

The International Harvester Company announced in its fourth quarterly report for 1944 that it had produced 50 percent more mechanical corn pickers in that period than ever before.

While, at the University of Iowa Agriculture Experiment Station it was announced in December, 1944, that a bushel of corn can be harvested and cribbed for a time expenditure of only 2.7 minutes as compared to the average time among farmers of from 6 to 15 minutes.

Hay Baling

Technologically, haying was 50 years behind the times until U. F. Leubben of Omaha, Nebraska, invented a rotary hay baler. The baler processes 6 tons an hour, with only one man operating it. It scoops the hay up, rolls it into a cylindrical bale, ties it and throws it out, all automatically. The politician, running for office, who used to have his picture taken pitching hay to demonstrate (to his majesty, the voter) how much he liked the simple things of life, will now be out of luck.

Fertilization

The Purdue University Agricultural Experiment Station announced the following in a release dated July, 1943. "If adequate and balanced quantities of nitrogen, phosphate and potash were provided and were used correctly, the farmers of Indiana could produce 85 million more bushels of corn and 32 million more bushels of wheat, oats and soybeans as well as similar figures for other crops without plowing up more land and *without greatly increasing the labor load.*

Think You'll Ever Go Back?

And so it goes. The process is merciless. It is unidirectional and

irreversible. Technology strikes where it wills. No political conniving; no business conspiracies can hold it back. The shaky Price System structure must give way. In this progression the human components involved are shuffled around without any compunction. The problem is not one of moral indignation; it's one of physical measurement and control. Farming as a way of life is on the way out. The only thing that can be done for the farmer is to take him off the land.

By this we mean that farming is now becoming the science of agricultural technology. The old oaken bucket in that deep, cool well under the shade of the Sycamore tree close to the barn, the well-thumbed Almanac hanging by the kitchen stove, the bottle of liniment 'good for man or beast' resting on the window sill, the bedraggled farm wife getting up in the darkness to prepare breakfast, cooking, washing and toiling at odd chores all day and evening long, the fierce independence and the dense ignorance are withering away.

If you want to make a go of it on the land today, you must install

technology. The more, the better. You must scrap the old way of life. The only way to produce more and to get more is to work less. Science envisions gigantic agro-technological units 25 miles square, of about 400,000 acres each. In the center will be a modern urbanate with every facility for civilized living. Agro-chemical technicians will operate the units. Processing plants will be right on the ground where the raw material is raised. Everything will be mechanized to the limit and operated around the clock. Every worker will be guaranteed abundance, distribution, security, short hours of work, and equal opportunity.

This is not farming as we know it now. It is as far ahead of it as the cotton picker is ahead of the Egyptian fellah with his forked stick and his foot powered irrigating device. The mandate of technology speaks to the American farm worker, tenant farmer and 'subsistence' slave, North, South, East and West, in the same language it uses to the industrial worker. Unite, Operate and Prosper—or suffer the consequences!

Investigate Technocracy!

THE PAST DIES HARD

'The peace of the world for the next century may depend on whether there is to be cooperation or conflict between the U. S. and Russia.'—Dr. D. F. Fleming, in *Chicago Herald-American*, April 14, 1944.

'One thing is certain: Europe is headed for an extreme revolution of some form or other. . . . Once the Germans leave, the

old "class struggle" between rich and poor, employer and employed, capital and labor, will *not* be resumed because the war has wiped out the class and property groups that used to engage in these struggles. Western Europe appears to be heading up for the same kind of social upheaval that accompanied the Protestant Reformation.' Quincy Howe, author and CBS Commentator, in *News Digest Magazine*, July 1944.

In the Question Box

by Public Speakers Division 8741-1

This department consists of actual questions asked at Technocracy meetings. Readers are invited to send questions in. Remember, the program of Technocracy since July, 1940, has been Total Conscription.

How would Technocracy tackle the problem of war debt liquidation of approximately \$500,000,000,000 with the customary interest? A.A.C.

Technocracy has no intention of tackling the problem of war debt liquidation. That is a Price System problem; and Technocracy does not operate with Price System methods. The adoption of Total Conscription will make it impossible to add another dime to the national debt. Total Conscription provides that the Governments of the United States and Canada will assume title to all national corporate wealth and will conscript the physical facilities and operating personnel of the entire industrial system. Having done this, the Governments will then operate them by engineering methods, without taxes or profits. Had this been done at the beginning of the war, there would have been no war debt. No, my friend, Technocracy has no intention of pulling the Price System's chestnuts out of the fire. Let them burn their own fingers. However, we

can prevent the debt from going any higher by adopting Total Conscription at this time.

What is Technocracy's position with regard to conscription of labor alone? J.H.W.

Conscription of labor alone is a fascistic move. Conscription of capital alone is a communistic move. Total Conscription is the only alternative. It enrolls *all* citizens in National Service. It conscripts *all* men, *all* machines, *all* materiel, *all* money. It puts *all* citizens on the same basis as the Armed Forces. The guiding principle is 'National Service from All and Profits to None.' This is the antithesis of fascism.

Why are the fascists reactionary, but still go on making technological strides? H.W.D.

Fascism uses technology to the best of its ability to freeze the further advancement of technology. This is because the advancement of technology creates unsolvable social problems. As long as any economy is in a state of expansion, it is not compelled to solve its social problems. They can be glossed over. The pressure for social change inherent in every social problem is always relieved by the escape valve of new frontiers in agriculture, industry and geography.

From the birth of America until about 1910, one could always escape from his problems. If one couldn't

stand his lot in life at home, he could always go out West, and squat someplace, and let the country grow up around him. This was a favorite route to Easy Street in America for a long time. Then, again, one could always go into business for himself. It wasn't hard to do in an expanding economy. The melting pot of America boiled with multifarious social problems for over a hundred years. But it never boiled over, because the steam escaped faster than the heat of technological advancement applied underneath the pot.

Since our social system is organized to produce and exchange goods and services for a profit, a certain set of physical conditions is necessary for its continuance. First, there must always be a scarcity of goods and services; else there will be no profit. Second, there must always be enough man-hours of labor available in the system to provide purchasing power to buy goods and services and keep the wheels of industry turning. This boils down to one or the other of two types of Price System operations.

The first one which has existed all over the world for thousands of years is essentially a static state of society. It is composed of a set of physical conditions wherein there is a state of natural scarcity of goods and services. This is combined with a handicraft-agrarian human-toil hand-tool method of production and exchange. Social change is frozen at a low level.

The other type of Price System operations is one in which there is

a continuous state of expansion, agriculturally, industrially and geographically. The first type of Price System operations may go on indefinitely. It is balanced by both man-made and natural repressions. The second type, obviously, cannot go beyond a certain point. First, it soon reaches the limits imposed by natural forces. Second, the impact of technology, whose advent made the expansion possible, soon imposes restrictions also.

Technology reduces man-hours of labor and thus reduces purchasing power. The process is cumulative at both ends. The effect of this can be evaded for awhile by various devices. Among these are installment buying, Government spending, and war. The general trend once started feeds upon itself and grows greater. The heat of technological advancement underneath the social pot continues to mount in intensity. The natural escape valves of the Price System are wrecked. The devious devices that have substituted for them are becoming more and more unworkable. Ergo, the pressure for social change rises higher and higher.

There are only two Price System ways out of this dilemma. One is to find somehow a new and legitimate period of physical expansion. The other is to revert back to an earlier stage of development and freeze the social mechanism there. That essentially is what fascism is attempting to do.

Fascism is social reaction to escape from the problems brought on by the

advancement of technology, by killing off a sufficient number of the population so that a handicraft-agrarian system of human toil and hand tools will be adequate to support the survivors. It is a conspiracy by corporate enterprise, ecclesiasticism and the political state to resist social change. Naturally, it uses the most efficient tools at hand. That is why it employs technology.

FLOWERS, FINANCES AND FLYING

An American flower grower, while on a prewar tour of gardens in Ireland, came upon a hybrid rose which had a peculiar tint, peculiar, that is, for a rose. Calling over the grower in charge, he asked him for the straggly little mistake, and the Irishman was glad to get rid of it. Carefully transplanted to a Newark, N. J., garden, the flower—the world's first gray rose—has flourished on this Continent. (Note to Technocrat floriculturists: The complete story of this gray rose can be found in *Collier's Magazine*, September 23, 1944.)

A General Electric Co. official was reminiscing about the late electrical wizard, Charles Steinmetz, who was the Edison of his day. . . . 'Steinmetz was worth a salary of \$1,000,000 per year to us,' explained the official, who then told what little regard the genius had for money. He was offered a contract, and refused to accept it. He was then offered a salary, and refused to accept that too. . . . 'I want

Its object, however, is to imprison technology and thus control its social impact.

There is only one sure way to defeat fascism in America. That is by means of Technocracy's Program of Total Conscription. This will free technology from all Price System restrictions and give it full liberty of action to solve America's social problems for good and for all.

a simple financial arrangement,' said Steinmetz. 'Whenever I need money, give me permission to get what I want from the paymaster.' The arrangement was completed, and every ten days or two weeks, the electrical wizard would draw the munificent sum of \$50.00.—Extract from Kup's column in the *Chicago Daily Times*, August 21, 1944.

When the American and Australian forces were fighting in the New Guinea jungles a force of 5,000 soldiers was completely cut off from their supply base. The Japs didn't know it, however. The condition obtained for two weeks. During this time they were supplied by a single Douglas C-47 Skytrain. The ship made 57 trips during 12 days and hauled 257,300 pounds of supplies to the fighters. This is slightly more than 128 tons. Since 57 trips were made the average haul was a little better than 2¼ tons per trip. (From Douglas Airview, November, 1944). *Ed. Note:* When we read this, we couldn't help thinking about Technocracy's Flying Wing. This super-bomber has a carrying capacity of 50 tons. According to our figuring, a single Flying Wing could have hauled more than 128 tons in three trips, instead of 57.

Each In His Own Tongue Voice of the Price System

Did They Say That?

by Publications Division 8741-1

We may be thankful for the depression for no longer are people worrying about and striving to attain false financial standards as they did before the economic structure was upset.

Reverend Ormal Leroy Miller, in a sermon at the University Methodist Church in Madison, Wisconsin, Thanksgiving Day, 1932. (As reported in *The Progressive*, October 2, 1944.)

The depression has been a mighty fine thing for the boys and girls. It gave them the chance to do their own thinking and made them self reliant.

Edgar A. Guest, a few days after Thanksgiving Day, 1932. (As reported in *The Progressive*, Oct. 2, 1944.)

The University of Chicago recognizes that the main function of business enterprise is to produce and distribute goods and services for profit, and that patents play an important role in the effective operation of the business economy. The industrial application of inventions and discoveries is the task of industry—not the University.

(From the Patent Policy of the University of Chicago as outlined in a circular distributed by it.)

Free enterprise does not connote complete planning on a national level. It connotes a plan made by each individual or each business within the framework of free opportunity.

John M. Hancock, financier and co-author of the Government's Baruch-Hancock report on reconversion at the 1944 annual convention of the National Association of Manufacturers in New York City. (As reported in the *Chicago Tribune*, Dec. 7, 1944.)

—the private enterprise system is the best known means of bringing about effective world prosperity and employment, and of securing and maintaining world peace.

Excerpt from an addendum to the report of the International Business Conference, with delegates from 52 nations, which met at the Westchester Country Club at Rye, New York, last Fall. (As reported in the *Chicago Sun*, Nov. 17, 1944.)

We have so improved our manufacturing methods that fewer people will be needed to produce our population's prewar requirements. The answer is the production of new kinds of things.

Eric Johnston, president of the Cham-

ber of Commerce of the United States at the Chamber's marketing conference. (As reported in the *Chicago Sun*, Oct. 24, 1944.)

It is fortunate that the large companies exist so that the small operator can get a fair return on his business by selling it.

Eugene Holman, vice-president of the Standard Oil Company of New York, before the Chamber of Commerce of the State of New York. (As reported in *The Nation*, June 17, 1944.)

Let's teach Americans to want to be rich again. Let them compete for that honor . . . dog eat dog. It's the wealthy who will be the saviors of this country.

Fred Perkins, York, Pennsylvania, battery manufacturer. (As reported in the *Chicago Herald American*, Dec. 9, 1944.)

If women had run the affairs of the world for the past few thousand years, they could hardly have made a worse mess of them than the men have, . . . Woman's reproductive apparatus is so complicated that the rest of her has to be simple, and great

statesmanship calls for simplicity.

Ernest A. Hooten, professor of anthropology at Harvard University. (As reported in the *Chicago Sun*, Oct. 18, 1944.)

Any man elected to the office of county treasurer, sheriff, coroner, clerk of the court, or register of deeds (of Cook County) who cannot retire at the end of one term with \$500,000, is unfit to hold public office.

The late Robert Sweitzer, former Treasurer of Cook County, Illinois, in which Chicago is located. This eminent politico made this statement in all seriousness to a group of reporters. One of them present passed it on to this writer. Well, Mr. Sweitzer ought to know, he tried. He was indicted for misappropriation of some \$400,000 out of the County Treasury. He died before his trial came up.

This business of teaching every child indiscriminately how to read and write results in nothing more than mass illiteracy.

(From the Jesuit Magazine *America*, Oct. 31, 1931.)

Voice of Technology

They Did Say That

By Publications Division 8741-1

The youngster who rises in the school room and says, "Teacher you are wrong," is our most valuable citizen.

Watson Davis, director of Science

Service, before 2,000 mathematics and science teachers at the Stevens Hotel, Chicago. (As reported in the *Chicago Daily News*, Nov. 24, 1944.)

He that invents a machine aug-

ments the power of a man and the well-being of mankind.

Henry Ward Beecher, American clergyman, lecturer and editor (1813-1877).

There is no free will in the human mind; it is moved to this or that volition by some cause, and that cause has been determined by some other cause, and so on infinitely.

Baruch Spinoza (1632-1677), outcast Jewish philosopher, grinder of optical lenses and author of a book placed on the Index Expurgatorius. (As quoted in Dale Harrison's column 'All About the Town' in the *Chicago Sun*, Nov. 24, 1944.)

Using the equation that one kilowatt-hour of electricity is equal to ten man-hours of labor, wartime America has the services of about 800,000,000 invisible men, subject to direct orders. . . . This compares with 150,000,000 invisible men available in World War No. 1.

C. B. Huntress, vice-president of Republic Coal and Coke Company, on December 3, 1943. (As quoted in *Coal Age*, January, 1944.)

I sometimes wonder if our democracy in its present form is equipped to face the problem of technology.

The late Henry T. Rainey, Speaker of the House of Representatives from 1933 to 1936. (As quoted in Emilie Gavreau's new book *The Wild Blue Yonder*, devoted to the story of how the Price System interfered with and

delayed the rise of American air power.)

The human race never retraces its steps, it can move in only one direction—forward. But it may do this in a downward as well as in an upward direction. It is up to us to choose the right course.

The late Hendrik Willem Van Loon, newspaperman, author and historian.

The highest purpose of scientific achievement is more abundant life for man. To discover a truth, to invent a machine or method, may be gratifying and valuable but the greatest achievement comes in putting the truth, the machine, the method to use for mankind.

Sir Richard Gregory, former editor of *Nature*, when he was in the U. S. A. in 1938.

At the turn of the century, civilization was about at the point where it could leave the old era of scarcity and embark on one of potential abundance, made possible by science and its applications. World War II will have demonstrated completely the fact that man can overproduce all his material needs, including food, clothing, shelter and everything else of a material nature which he requires, even to luxuries we cannot even visualize now.

Frank C. Whitmore, Dean of the Pennsylvania State College of Chemistry and Physics, in an article in the *Louisville Times*, Nov. 15, 1944.

WHO'S SPOOFING WHO?

'An American Youth orchestra to be conducted by Dean Dixon, now is being organized. The conductor is trying to select the orchestra members in true democratic fashion. . . . During the auditions, Dixon sits behind a screen so that he is unable to see the musician who is playing. In this way, the conductor explains, by democratic process, his orchestra members are selected not on the basis of race, creed, color or sex, but only by their ability as musicians.' (Leonard Lyons, in his column in the *St. Louis Globe-Democrat*, July 18, 1944).

Editor's Note: The above is a correct example of the functional selection of ability. Functional selection by ability would be the method used in a scientifically controlled society.

NOTICE

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SONNET TO EARTH

'But if they be wise to measure the star
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with waiting heat,
There are starry uses of stars. Let them
love their planet and see
How it longeth to bear the burden and let
the slave go free.
They shall loose the lightning gently, the
granite shall bloom with grain,
And under the rainbow's glory young Eden
shall come again.'

—from a poem by Edwin C. Lewis, in
University of Chicago Poems, published by
U. of C. Press 1923.

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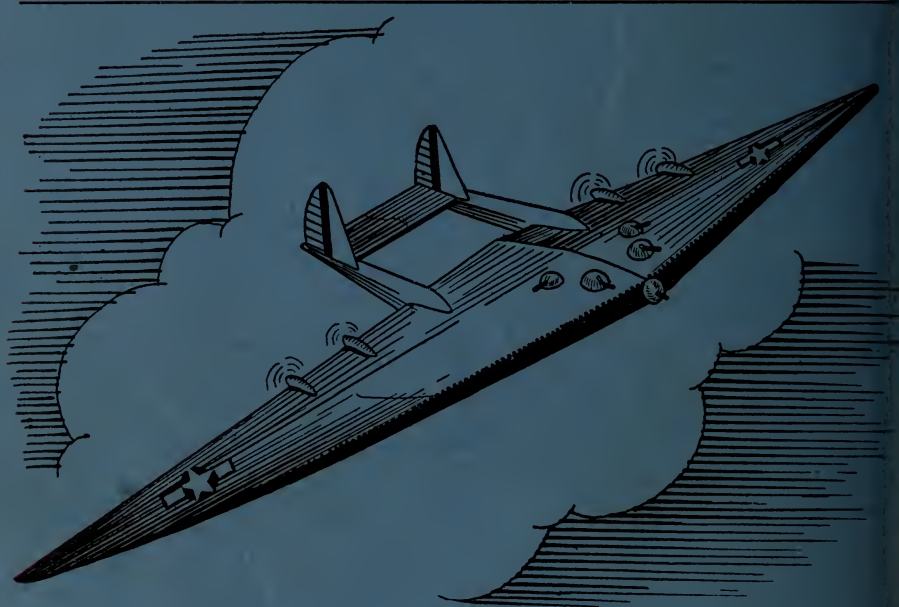
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TECHNOCRACY DIGEST

625 W. Pender Street

Vancouver, B. C., Canada

The Economic Pattern for Postwar America

By Sidney H. Kasper

Reprinted by Permission of *The Progressive*, November 27, 1944

MASS Unemployment, shortages in some critical fields and overproduction in others, and a badly shaken price structure—these are the principal economic developments that Gunnar Myrdal, famed Swedish economist, predicts for postwar America.

Myrdal's painstaking survey of the United States economy is now widely consulted by Government and business economists. Entitled *Economic Developments and Prospects in America*, this survey was first read as a paper before the Economic Society of Sweden and has subsequently been circulated privately in this country as one of the ablest documents on postwar prospects for America. The internationally known head of the Swedish Postwar Planning Commission, Myrdal spent several years in the United States making a survey of social and economic conditions.

A severe slump—probably a culmination of the 1929-32 crisis—is in prospect within six months to three years after the war, Myrdal warns us. For agriculture he sees a continued production shortage and high prices for a few years after the close of the European phase of the war, but overproduction and depression afterwards.

Dr. Myrdal is no superficial alarmist. He recently authored the definitive, profound work on the American Negro, *An American Dilemma* (incidentally, if you haven't read it, it's

past high time). He speaks from long acquaintance with the American scene and world economics, and this study is a welcome antidote to the newspaper and magazine advertisements of postwar gasless automobiles, iceless refrigerators, insectless Summer homes, and big wages for all.

War Boom Analyzed

The study begins with a brief summary of pre-war conditions in this country. According to Myrdal, America's economy was in a seemingly perennial and irreparable stalemate from 1930 to 1940. When World War II broke out, the national income had not reached the level attained in 1929—even though our increasing population affords 500,000 workers each year, and our technical advances increased productivity by about 21½ percent a year.

Came the war, and with the impetus of Pearl Harbor the American economy jumped from stalemate to full employment. By the end of 1943 unemployment was down to a minimum, manpower rose from 55 to 64 millions, and production increased by 50 percent over the prewar level. Wages have risen considerably and corporation profits have zoomed to an all-time high.

Dr. Myrdal analyzes our war boom and finds that it resulted from (1) a heavy inflationary pressure initiated from underneath by Government de-

mand for war goods, and (2) severe compulsory regulations from above by means of which production and prices are directed and controlled centrally.

America's postwar problems depend upon what is going to happen when Government demand for war materials drops and then stops, and when compulsory regulations are relaxed and replaced by 'free enterprise.' Full employment depends on our ability to stabilize our present boom. A boom could conceivably be stabilized in a country with a centrally directed economy, such as the Communist and Nazi economies; but how can it be done in an unregulated capitalistic society where, it seems, every boom must have an end and lapse into depression?

With the Government supporting the war boom by purchasing war materials to the extent of half the national income, most people are looking forward to peace as a situation in which we will have no state regulation or state bureaucracy.

Herein, says Myrdal, is the economic dilemma of American postwar discussion.

Myrdal finds the American public highly — and unwarrantedly — optimistic regarding its chances to retain the high level of war production and business in peacetime. Underlying this optimism is the growing conviction that this is the job of private enterprise, and that the abolition of Government regulations is one of the prerequisites of the maintenance of full employment. Many businessmen

believe that full employment in the postwar world is the great test of private capitalism; at the same time 80 percent of American workers who are now employed, according to a poll by *Fortune Magazine* are convinced that they will have jobs after the war.

Optimism and Politics

Why all this optimism? Apparently it is based on the super-successful war effort of American industry. Myrdal is careful to point out, however, that the war effort has been backed by an unlimited demand procured by unlimited purchasing power, but that the postwar economy will be faced with a *limited* demand, backed by *orthodox* financing.

Our optimism is also underlain with political considerations. 'In a situation where people are demanding full employment, the most simple device for preventing radical views from spreading is to claim that free enterprise will do the job.' This is very dangerous, for 'if private enterprise should not prove capable of stabilizing full employment, discontent of the people with the system of private capitalism should certainly be all the greater, and radicalism would perhaps become really dangerous.'

The main features of peacetime conversion are thus outlined by Dr. Myrdal:

Release of Soldiers and Workers

Myrdal gives a minimum figure of 14.5 million soldiers and workers to be released after the war. Even with the most favorable assumptions, he says, the shifts during the conversion

period will comprise almost half of the American population. War production will be sliced tremendously; aircraft to five percent its present level, shipbuilding to 10 percent or less, machine tools to 10 percent (with its present capacity, this industry could supply a country the size of Italy with all the machine tools it needs within six weeks!), aluminum to 5 percent. Other industries which have been curtailed by the war—leather, glass, textiles, furniture—will need a lot of manpower, but even the highest forecast indicates a total industrial employment of 14 millions, compared with today's 18 millions and prewar's 10 millions.

Absorption of Workers

To estimate this process, Dr. Myrdal uses (and dissects) the widely publicized and soothing figures issued by Prof. Alvin H. Hansen of Harvard University, figures which have been used by many economists and writers to show that our postwar problem is really nothing to worry about. Prof. Hansen liquidates the 14½ million workers who will be released this way:

3 to 4 million . . . women, youth, and older workers, who will voluntarily retire from the labor market.

1 million . . . will return to agriculture.

2 to 3 million . . . to trade—
if there is full employment (!).

3 million . . . service industries (domestics, etc.).

3 million . . . building trades (presupposing a building pro-

gram of about \$15 billion a year!).

Sounds good, doesn't it? But Dr. Myrdal mercilessly douses us and these figures with cold, icy logic. '*As a justification for peace optimism,*' he says, '*these calculations are worthless.*' The analysis is altogether static. It is not at all concerned with how the whole procedure is to be brought about—*by developments over a period of time . . . it presupposes full employment* and then studies the direction of demand for manpower required for realizing this supposition. If we assume that there will not be full employment, then the release of manpower in industry would be greater in all industries and the possibility of providing the unemployed with new jobs would be less everywhere. Then unemployment will arise. . . ."

Dr. Myrdal prefers the calculations made by S. Morris Livingston of the Bureau of Foreign and Domestic Commerce. Livingston analyzes the meaning of full employment as follows: In 1940 we had nine million unemployed and 46 million employed. Adding to this the 2½ million people who have and will have come of age from 1940 to 1946, subtracting the women, youth, and older workers who will retire, and figuring a peacetime army of two millions, we find that full employment in 1946 will mean an increase in employment over 1940 by 10 millions. The national income, with full employment, would amount to \$140 billion in 1948, compared with 1940's 97 billion dollars.

Livingston then proceeds to translate such full employment into concrete plans of production and investment for every branch of industry and product.

Mr. Livingston raises a danger signal: He is careful to point out that if 1946 production merely equals that of 1940 (a good year by 1930-1939 standards), unemployment will amount to 20 millions, as a result of increased productivity, new workers, and our 1940 figure of nine million unemployed. For those who seek a short work week as a solution to all employment ills, Livingston states that a work week of only 33 hours will still leave us with 13 million unemployed.

Concerning these figures, Dr. Myrdal poses two questions: (1) Do the plans of private enterprise add up to full employment, and (2) from what source will the needed purchasing power for full employment come when the Government no longer needs almost half of our income and production for war? In answer to the first, Myrdal states that numerous industrialists have made extensive calculations on the basis of Livingston's figures, regarding their own production and investments; when questioned about the part they would play in the general plan, *they have said that their own figures would run at a considerably lower level than was necessary for the fulfillment of a full employment program.* 'This means that the respective enterprisers merely believe in full employment in general, presuming that everyone else will act

. . . to produce full employment.' Such separate plans, he adds, will inevitably lead to slump, unemployment, further slump, further unemployment, etc.

In answer to the second question he says, 'Are the American enterprisers likely to stand up before the country and complain that the critical economic situation compels them to suggest a huge rise in wages in order to create a sufficient basis of purchasing power for production at a level of full employment? Such things do not happen in real life and hardly ever in the world of fiction.' To back up Dr. Myrdal's statement, one should read the statements of Robert M. Gaylord of the National Manufacturers Association and Eric Johnston of the U. S. Chamber of Commerce in hearings before the WLB on the steel workers' request for higher wages. 'By not raising wages, and, even more, by reducing them, the foundation of purchasing power for full employment is withdrawn and the depression curve begins to move downward,' adds Myrdal.

Even if the miracle occurs and employers maintain or raise present wage levels, Myrdal doubts that the average American will increase his standard of living so as to absorb all the new products produced by full employment. Because of rigid habits of economy and unstable income, the American standard of living during the '30s did not keep pace with our increase in productivity. To keep the boom going we must, in a very short time, catch up with the rise in the standard of living which has been

accumulated during the past 15 years. Only a rapid rise in our standard of living will make for full employment. A gradual rise, fine during a recovery period, could not keep the business curve from nosing downwards.

The Principal Factors

Dr. Myrdal then takes up the favorable and unfavorable factors for the maintenance of boom conditions after the war. The favorable factors are:

1. Restocking of Inventories and Relief

The restoration of exhausted stocks to normal volume may amount to 10 billion dollars after the war. Further, there will be a great demand for American products by foreign countries. However, much of the demand will be for goods of which there will be a shortage in the United States, so that there will be a considerable reduction from our wartime exports of some 13 billion dollars.

2. Deferred Demand

Our greatest hopes are tied up with the extensive deferred demand, especially for durable goods. A recent survey indicates that 53 percent of the American public is ready to buy 2.3 billion dollars worth of cars, and almost one billion of household appliances, as soon as the war ends.

3. Liquid Savings

We have immense savings in cash or liquid form. However, whether or not they will immediately be converted to purchasing power is doubtful, depending on how much security the purchasers can be assured of. One striking fact constantly overlooked in popular discussion is that

if motor car production should be expanded to eight million a year, compared with the prewar peak of six million in 1937, *the motor car industry would, nevertheless, be forced to lay off several hundred thousand workers.*

4. Construction

We all expect lively building and construction activity after the war. Fifteen billion dollars would be the proper share of building under full employment conditions. Yet both housing and business construction will reach at peak only about seven billion dollars, leaving about eight billion dollars to be accounted for by Federal, state, and local building of hospitals, schools, etc. Myrdal laconically remarks 'However, the political prerequisites for the realization of such a program hardly exist in America.'

5. Unemployment Relief

Taking for granted that unemployment relief will be generous this time, Myrdal adds that we will have 15 million veterans who, with their relatives will dominate politics to the extent of making relief grants generous, thus increasing purchasing power.

6. Tapering Off of the War

The strong possibility that the war with Japan will continue a year or two after the defeat of Germany means that the gradual displacement of war economy will give conversion a badly needed pause and help to keep things going until V-Day. This is a favorable factor because price and production controls will be main-

tained, and because war expenditures will decline slowly instead of being choked off suddenly.

7. *Continuation of High Government Expenditures*

There seems to be general agreement that defense expenditures, interest on the Federal debt, pensions to veterans, extension of social insurance, relief, educational and health services, and housing costs will keep combined Federal and state expenditures up to about 30 billion dollars after the war, in contrast to pre-war's eight to nine billions.

8. *No Balanced Budget*

Says Dr. Myrdal: 'I dare make the prediction that, whatever party may be in control of Congress, there will not for a long time to come, not during this decade anyhow, be a balanced budget in America.' Why not? Because everyone is outbidding everyone else in urging reduction of taxes for the purpose of promoting investment and production.

* * *

The unfavorable factors are:

1. *Sharp Decline in Postwar Purchasing Power*

Unemployment caused by the conversion to peacetime production, plus the return to the normal work-week without overtime bonuses and the end of high wartime wages, will, Myrdal feels, cut the national income severely. True, many workers have built up nice nest-eggs during the war, but unemployment and lower wages will prevent such savings from being turned into purchasing power.

2. *Severe Regional Upsets*

Myrdal decries the tendency to talk

about 'overall situations.' Peace will undoubtedly leave us with many depressed areas in the South and on the West Coast, and in some places in the Middle West and New England. Many munitions plants and shipyards have been located in towns where there is no other industry and where the war industry has no peacetime counterpart. Perhaps half the workers in California alone will be released.

3. *Transfer of Labor*

The economic and social problem of transferring workers between industries and geographical locations will be tremendous. While great mobility of labor has always been an American tradition, we may find that our labor markets have become rather stable. Many who have migrated to the agreeable climate of the West Coast plan to stay there. Unemployment and unemployment relief will tend to keep labor immobile everywhere.

4. *'Too Little and Too Late' Planning*

'One of the most disturbing features of the lack of postwar economic planning, resulting from the unfortunate internal political conditions in America,' says Myrdal, 'is the lack of willingness to face the conversion problem and to take the steps necessary to solve it.'

5. *Labor-Business Conflict Over Wages*

While employers want wages lowered, workers who, for the most part, have kept their no-strike pledge, want wages unfrozen and pushed higher.

Add to this, says Myrdal, the restlessness engendered by the reconversion procedure, mass unemployment in war centers, and probably a confused political situation, and the result may be a 'radicalization' of labor opinion, actual conflicts on the labor front, and, unfortunately, even 'the race question . . . in its most terrifying form.' This cannot help depressing the business cycle.

6. *Surplus War Supplies*

Here some planning has been done. But the huge stocks of state-owned products which the War Department will have on hand at the end of the war—office equipment, blankets, cars, tools and foodstuffs—may amount to as much as 60 billion dollars. Relief and the needs of reconstructed Europe may offer what Myrdal calls 'opportunities for humanitarian dumping on a large scale under . . . UNRRA,' but even this won't suffice. The stocks will be disposed of, but hardly without a depressing effect upon business here.

7. *Cancellation of Contracts*

Contracts involving 100,000 principal concerns and 10 times as many sub-contractors, and amounting to over 75 billion dollars may well have to be cancelled and individual damages settled at war's end. The greater part of American industry will be involved. Which contracts and which contractors will be cut off? How much will be paid? Myrdal remarks, 'If the whole matter is not handled with great wisdom, the resulting disputes will keep busy for a long time a much larger number of American

lawyers than America is now encumbered with.'

8. *Government-Owned Plants and Equipment*

Most difficult of all is the problem of disposal of government-owned plants. Built at exceedingly high cost due to the war, and privately-operated, they amount to three-fourths of all factories built during the war and are valued at 15 billion dollars. Government-owned plants dominate certain fields; the Government thus controls 100 percent of America's total production of synthetic rubber and high-octane aircraft gas, 92 percent of magnesium production, 50 percent of the machine tool industry, and even 10 percent of the steel industry. These factories are solidly built and modernly equipped; about three-fourths of them can be converted to peacetime production. Shall the Government operate them in defiance of American tradition, or shall private industry buy them—at the high wartime cost?

Dr. Myrdal concludes that: 'It is to be expected that America after the war in Europe will experience a high degree of economic unrest. There will be shortages in certain fields and over-production in others. Price development will be uncertain and the price structure will be badly shattered. There will certainly be mass unemployment in large areas. . . .

'Yet it is possible that a "sellers' market" will be established so generally as to avoid an immediate post-war slump. But, probably within . . . half a year to three years this devel-

opment will change into a slump. This slump may turn out to be a culmination of the deflationary crisis of the early '20s and the gigantic crisis between 1929 and 1932.

'In the field of agriculture a continued shortage of production and very high prices are to be expected for a few years after the end of the European war. But thereafter an over-production crisis must be apprehended. This crisis may be very severe and can have an unfavorable influence on industrial activity in case the latter at the same time shows a tendency of passing into a state of decline and depression.'

He passes on to the international scene and says that the repercussion of American economic developments on the rest of the world will be serious. While America is the second largest importing country in the world, and while we were before the war the world's largest exporter, foreign trade plays a very subordinate role in our economic planning. In contrast to our attitude early in the war, our attitude now is rather chilly towards foreign trade; it is no longer regarded as being important for keep-

ing up employment in the United States.

However, while foreign loans and trade are unimportant to us, they are extremely important to the rest of the world. 'If America goes into a crisis and depression . . . loans as well as importation tend to drop considerably and the result will be that economic possibilities will deteriorate throughout the world. . . .'

How seriously Dr. Myrdal is concerned with the conversion problem is best expressed by his words to his own countrymen: ' . . . the making of postwar plans for Sweden is a much simpler proposition. Still we ought to be careful not to be too optimistic. We are also dependent on developments in the outside world . . . my studies of the economic situation in America and my reflections as to what a slump in America would mean to Sweden have made me feel very serious. There are plenty of reasons for care, lest, by too optimistic assumption, we make the task seem too easy for ourselves.'

Words that Americans, as well as Swedes, might take to heart as they behold the dawn of victory and the prospect of peace.

EDITOR'S NOTE TO ABOVE ARTICLE

Myrdal's study, as reviewed by Sidney H. Kasper, diagnoses the postwar case and says, in effect, that it is serious. So What? What does he suggest to alleviate suffering in that period? How will you maintain YOUR purchasing power? He cannot, of course, suggest any solution within the framework of the Price System, because in the Price System the continued existence of the status quo is taken for granted. The impact of technology on Purchasing Power is completely ignored or played down.

There is a solution, of course, to the postwar problem, but it will never be found within the framework of studies stemming from political, business, financial and labor factors. It can be found in an engineering design of social operations, by applying the scientific principle to our social order.

As The Twig Is Bent

By Samuel Kaplan

What Price Scarcity?

SCARCITY and abundance are contradictory terms. Neither can be discussed in relation to the other, except as comparatives in contradiction. Scarcity within America belongs to the past. Abundance is now available by the full use of our science and technology. The forked stick applied to the land never produced a surplus; the combine helped produce an abundance that led to depression.

All people in all climes live in accordance with the volume of their productive capacity. If it is high, their civilization is advanced; if it is low, their civilization is retarded. All the high sounding phrases of philosophy or politics are as nothing before this fact. Neither can this fact be altered by the musty utterances of Price System economists. These gentry can try to explain the status quo, or, more correctly, apologize for its maladjustments.

We can permit human cussedness to promote the will to ignorance or the will to self-destruction and we can set up these as whipping boys to conceal our self-interest; but we cannot deny the directives set up by environmental conditioning. The tree leans with the wind; we lean toward the source of our bread and butter. Every living being is in continuous reaction to the environment.

The Price System is geared to scarcity, and is never in equilibrium, even in its primitive state. The prayer by man for abundance becomes a curse upon its realization. Values, so-called, disappear under the threat of this abundance. This was the reason for the destruction of pigs, the plowing under of cotton and corn, the dumping of potatoes and fruits into the rivers, lakes and sea. Prices for these foods on the hoof or on the vine had to be maintained to avoid general bankruptcy and collapse. Obedience to this rule of the Price System condemned a third of our population to under-nourishment, poverty and despair. The Price System had to be propped up lest it collapse. The welfare of our people had to be a secondary consideration. Such is the train of thought imposed by past social conditioning.

Get Thee Behind Me, Abundance

This is not a new world. It is the same old world the human race has always known. The difference is in the things we have discovered, what we have done with our discoveries. The human race, when young, was frightened by its shadow; it is now frightened by its substance. It is because of our fears that we may regress into barbarism when the Price System fails. We are afraid of losing

our possessions, but refuse to visualize a state wherein all of these may become without pecuniary value and still remain available for the satisfaction of our needs. We insist that the future is hidden and dark, when the fact is that the correct road ahead is plain and bright.

We need not fear abundance. It has come about as the result of our science and technology, our great pro-

ductive capacity and our great operational skills. The Price System has outlived its usefulness and will go, as have other systems and mechanisms of the past.

We must prepare ourselves for a different order of magnitude in which different methods of production and distribution will be possible to free the abundance which is ours for the asking.

WAR IS NOT HELL FOR EVERYBODY

After three years of war in the Pacific American scrap metal sold by American business to Japan is still being used to kill American fighting men. In a study made for the Army and Navy Ordnance departments and the Office of Scientific Research and Development, the Battelle Memorial Institute, an industrial research organization at Columbus, Ohio, reached this conclusion 'The laboratory data show, from the presence of residuals, that the scrap which the United States sold to Japan before the war plays a considerable part in the munitions being used against us.' (As reported in the *Chicago Tribune*, March 2, 1945.

Editor's Note. The following quotation was written in *A-4 Technocracy Magazine*, in October, 1935, by Howard Scott:

Our debt merchants have been extremely diligent in the last few years in the profitable enterprise of supplying Japan with most of its oil, most of its nickel, cotton, pulpwood, sulphur and other necessary raw materials and manufactured products. . . . if America becomes involved in a war with Japan, we can console ourselves that we at least have given her something to remember us by—American materials will come back to us done up in Japanese wrappers that won't be so pleasant, in fact, they won't be bouquets.

'A survey made by the Milwaukee Assn. of Commerce postwar planning division has revealed that *during the war the large manufacturers become larger while the smaller ones become smaller.*

'It was found that Milwaukee manufacturers with over 500 employees had made employment gains averaging 52 percent while gains in plants employing from 25 to 499 ranged from 4½ to 20½ percent. Firms with less than 25 employees *lost* an average of 14.7 percent. Concerns in the distributive trades and other commercial activities followed a similar pattern. Those with over 500 employees lost an average of (only) 6 percent, but firms with less than 25 employees reported an average loss of 28.7 percent.'—From *Industry & Enterprise Help Small Business* in the Chicago Region Third quarterly report 1944, U. S. Dept. of Commerce Field Service.

'The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so must we think anew and act anew. We must disenthrall ourselves, and then we shall save our country.'—Abraham Lincoln.

It's a Funny World

Some Points Walt Disney Overlooked

By Maurice Milton

Laugh and the World Laughs With You

THIS little adventure in the art of laughing is designed to help you understand America. True, this is a delicate time in our history to give lessons in how to laugh. Yet, it is necessary because no nation in the world will be faced with such opportunities for laughter as will be afforded post-war America.

This does not mean that at the war's end we will promptly enter the laughing period; obviously not. First, we will have to resume tilting with the multifarious pre-war social problems which we always failed to solve before. The problems have grown to such magnitude and complexity that they have coalesced and become one major problem. Now it can be stated unequivocally that no approach ever attempted in past history offers any hope for its solution.

America's problem is an entirely new problem and demands an entirely new solution. When this solution is in full application, no people in history will have experienced what we Americans will. What will that experience be like? Well, now, that's what we want to go into. But, first, you'll have to take a lesson in how to laugh.

What you must accomplish in learning how to laugh about America's social problem is to achieve a detached attitude toward folkways, mores, customs and taboos, toward Price System propaganda of all types, and finally toward reason, logic and discussion. Yes, you will learn to laugh at these, too, strange as it may seem now.

You may be frightened by all this at first. When the realization sinks in that your survival depends on it, you will lose that fear. It will seem impossible only in spasms which will recur. But these recurrences will diminish in intensity and finally cease altogether. You will then be able to understand and analyze your environment, and you will laugh.

King of the Animal Kingdom

In all of the 7,000 years of man's recorded existence, he has set up societies because by so doing he increased his survival probabilities. This is the story boiled down to one sentence. Man came into what we call society as a predatory animal. During the last 7,000 years he has been doggedly trying to hypnotize himself into the belief that he entered as a social creature, or, at the very least has become one down through the ages. To convince himself, he devel-

oped the escape mechanisms of reason, logic and discussion. This is our first laugh.

What we must acknowledge to our subjective selves is that this was because of the fancied necessity of escaping from the reality of our animal-like natures. But what has happened in America in the last 150 years has completely annihilated this former escape necessity. Today we find ourselves faced with the new and more pressing necessity of giving up completely the former necessity. Sounds silly, doesn't it? Well, who cares how it sounds; that's the way it is. Do we dictate to our environment or does our environment dictate to us?

Ours is the first society in all history to find itself faced with the reality that the survival of all now hinges upon the proper functioning of the social mechanism upon which all are dependent. The survival of this mechanism, in turn, hinges upon the coordinated functioning of the many. Ours is the first technological society in history. That is why we are the first to be faced with that necessity.

Didn't any one ever call your attention to this condition before? Well, where could you have expected to have it called to your attention? After all, most of us have been denied any knowledge of our physical history. If you will investigate, you will find that Technocracy has been calling attention to it since 1933.

To understand all this is to know in which direction this Continent is most probably going. As the tech-

nological progression of our social mechanism continues, the probability of continuing the progression demands more and more coordinated and designed direction. This necessity is dictated by the physical requirements, not by the men at the controls.

Man learns by example and by doing. These are the only ways we learn anything. We are involved today in the first total war in history. Total war means the total application of the national technology to the prime necessity of supplying the fighting front, as well as the civilian requirements at home.

Science Is A Polyhedron

Lt. General Brehon Somervell, as Chief of the Army Service Forces, directs the production and distribution of services and supplies for 11,000,000 American service men and women, under every conceivable condition all over the world. This job is accomplished by the application of technological principles to logistics. This third great principle of war, called logistics, is the science of having the right thing in the right place at the right time. That is an engineering achievement.

General Somervell's function is to receive raw recruits (Service Commands); feed, clothe and house the Army (Quartermaster); build the camps, roads and bridges (Construction and Engineers); pay off the troops (Finance); police and pass judgment (Provost Marshal and Judge

Advocate); provide the weapons for warfare and service them, often under fire (Ordnance); run the communications (Signal Corps); move the troops and supplies (Transportation); care for the wounded (Surgeon General); minister to the soul (Chaplains); and in addition direct the function of over a million civilian personnel.

If it didn't sink in the first time, read the last paragraph over again, five or six times. And, remember, logistics is a branch of science; reason, logic and discussion are not.

Lt. General Somervell is a Staff General, not a Field General. Everything done in the field in modern technological war is dependent upon the functional operations under his direction. And, in the magnitude of this operation can be found no parallel in history. From the social standpoint, the importance lies not in who performs this function, but in the fact that the function must be adequately performed. The security of everything hinges upon it. The comparison of the function of any business executive to this operation is by relationship of no measurable significance. Yet our Congress fought the appointment of Somervell to the rank of General. It was finally granted due to the demands of the Chief of Staff, General George Marshall. Funny, isn't it?

For the past 25 years the capacity of American technology to produce goods and services has been going steadily upward. At the same time, man-hours of labor required in that production per unit have been going

steadily downward. Since 1939 America has about doubled its plant capacity to produce with an attendant reduction in man-hours. Since man-hours are the equivalent of purchasing power, this means that as we produce more, through technological methods, we are less and less able to distribute that very production. Funny, isn't it?

We are now at that point in the progression of technology where we, as a nation, are capable of producing and distributing to every citizen more than he, or she, is physically capable of consuming. To do this, we need less than 2 percent of the employable population's muscular energy. This is contrary to all the economic principles of the past. Yet we continue our futile efforts to apply 'principles' set forth by the classical economists to problems that had not yet arisen in their day. It is as though we permitted the 'principles' of alchemy to be applied to the development of synthetic rubber, or penicillin. Funny, isn't it?

Better Laugh Than Be Sorry

It is this particular set of paradoxical physical conditions that will shortly compel a mass movement in America. It will be the first social mass movement in history. You will most probably be a part of that mass movement, whether you know it at this moment or not. This movement will demand designed, national, technological control because the only alternative is national suicide. Between the two, there is really not

much choice, is there? Funny, isn't it?

The only Organization even calling attention to the necessity for this designed direction is *Technocracy Inc.* This type of national direction is the antithesis of dictatorship. Since you will most probably be a part of that mass movement, why not let Technocracy show you the who, what, when and where, so that you may then understand the why? It is really interesting, and, besides, your survival demands it. You will most probably understand it eventually through compulsion. Why not now, voluntarily?

There is no 'out' for you in the postwar plans of any minority pressure group. They all have an axe to grind. They are all picayunish. No such group can permit itself to understand America's social problem. It

would mean the end of their racket if they did. The only answer is Total Conscription of Men, Machines, Material and Money, with National Service from All and Profits to None. How can you expect any pressure group to endorse the liquidation of its own racket? Funny, isn't it?

If you study Technocracy, you will understand. Regardless of your past interests, you will then realize what your new and more pressing interests are. These will be based upon the general welfare of every last American as opposed to the welfare of anything less than the whole. It is a new concept of citizenship you will learn. And when you have learned it, boy, will you laugh at the old!

For more lessons on how to laugh, join that hardy band of pioneers on the frontiers of the New America, the members of *Technocracy Inc.*

Investigate, unite and operate!

ALL MIXED UP AND NO PLACE TO GO

'If education continues to emphasize the individual, it should not be surprising that we would have race and religious riots and a great wave of shop-lifting, which has become one of the greatest curses in all communities,' stated Dr. William J. Byron, professor of sociology at Northwestern University, before the Cook County Teachers Institute at the Morrison Hotel. (As reported in the *Chicago Daily News*, April 7, 1945.)

I come back to the fact that we are living in a mixed and divided life. We are pulled in opposite directions. We have not as yet a philosophy that is modern in other than a chronological sense. We do not have as yet an educational or any other

social institution that is not a mixture of opposed elements. Divisions between methods and conclusions in natural science and those prevailing in morals and religion is a serious matter, from whatever angle it may be regarded. It means a society that is not unified in its most important concerns.'—John Dewey, educator, in *Fortune* magazine, August 1944.

There are more than 5,000 persons currently attending seminaries, preparing for careers as clergymen in the city of Chicago. (Dale Harrison in his column in the *Chicago Sun*, March 5, 1945.)

176 murder cases in Chicago in 1944 resulted in one death penalty.

Where Are My Children?

By Olive Applegate

Americans are in a struggle to protect their precious Continental resources, yet seem at a loss to insure the future of their most treasured possession, American youth.

'These Are My Jewels'

JUVENILE crime which was sweeping the country before the war, remains unchecked and has reached such proportions that it is hardly possible to pick up a newspaper today without encountering startling episodes of maladjusted, thrill-seeking children.

Even prior to our entry into World War II, we had won the name of having the greatest number of young criminals in any modern nation. We had acquired this record while at the same time were in possession of the greatest portion of the world's resources, productive power, and trained teachers and educators. Our growing criminal problem, however, is only one of many indications of our failure to apply our great wealth to solve social and economic problems. America is still reaping bitter payment for negligence in the depression years, when millions of our young people were permitted to roam the streets unwanted, and apparently forgotten by society.

Children, teeth rotting for lack of

care, legs bent and crooked for lack of vitamins, lived a painful existence in hot, smelly slums. The law of survival reigned supreme in these fetid torture holes, where mere infants learned the code of the age 'Chisel the other guy, or he'll chisel you.' Out of *this* environment, did we actually expect to bring strong, competent, human beings? The large percentage of Army inductees declared unfit for service, and our rising delinquency rate, has proved otherwise.

Because of inefficiency and lack of foresight, factors which brought about our delinquent problems have increased alarmingly. Crowded housing conditions in defense areas, lack of proper play facilities, increasing birth rate, absorption of mothers and supervisors into war industries, lack of security, plus the general national confusion, all add up to a serious criminal problem among minor children.

Citizens who are concerned with national welfare and youth problems are sick at heart to see the war effort hampered and children growing into cripples and criminals as the result of inefficiency, indecision and greed.

Youth Foremost

Although we are in a major struggle to stamp out fascism abroad, we see individuals and groups at home striving to better themselves at the expense of the nation and the lives

of our fighting men. Large corporations go unpunished for admitted acts of sabotage; labor strikes hold up vital materials; business heads insist upon government guarantee of profits to manufacture or move war goods; overlapping government authority, red tape, political disagreements and slow moving policies form a tangle of interferences in our production lines; widespread black markets exist in every field; disabled soldiers, who have seen the real hell of war, and their families have been subjects for neglect. We attempt to drag our youth through this muck of indifference, intrigue and greed to mature, worthwhile citizenship. What will the end product be?

Many citizens ponder this question. Those who think in terms of human life and national welfare rather than in terms of political titles or profit have accepted Technocracy's proposals for Total Conscription as the only solution to our pressing youth problems and as a means to quick victory.

Daily, more citizens are hearing of Technocracy's Victory Program of Total Conscription, with National Service from All and Profits to None, and are investigating it. They refuse to stand idly by while their youth and their future is gambled

in a national game of political and business survival. They are demanding that the Government put their youth foremost. They are demanding proper housing facilities, schools, parks, nurseries, clinics, recreational centers, etc. They are demanding teachers and supervisors so that their children may be adequately cared for and educated. They are demanding this, and more, although they know that it means the drafting of workers and the training of new personnel and a new alignment of functions on a national scale.

And they are not cowed by the cry of 'dictatorship' which arises with every effort to coordinate war activities. Drafting of citizens to serve their country on the home front does not seem a severe measure when men are being drafted daily to die on the fighting front.

They are not playing favorites. They insist that machines, materiel and money, as well as labor be drafted for this all-important project.

Security and worthwhile objectives for their children and for themselves, the removal of profit as a motive for victory—these are the things which thoughtful citizens demand today.

Total Conscription is the only answer!

'The pioneer and bearer of a new evangel is always up against an inchoate mass, educable only when miserable, and, when prosperous too proud to learn.' Frederick Soddy in the foreword to *The Frustration of Science*.

'In times like the present, men should utter nothing for which they should not willingly be responsible through time and eternity.'

Abraham Lincoln in 1861, as quoted in *Radio News Magazine*, January 1945.

The Mathematics of Chiseling

You Can't Change 'Human Nature?'

By The Peripatetic Technocrat

The dictionary says that a number is a symbol used in arranging or classifying quantities. This sounds plain and simple enough. But it is neither. Or, perhaps, it is too plain and simple for its full meaning to be readily grasped. 'Arranging and classifying quantities.' It is surprising how much territory those four words cover. They even invade the sanctum of so-called human nature; the constitutional 'right' of every American to chisel his fellowman. Will 'free-men' stand for this? Now is the time for all good chiselers to unite for chaos, lest they find themselves 'arranged' down toward the bottom of the list.

'Go, View Your Father's Bones'

FAR be it from this observer to pose as one who has anything but a faint understanding of mathematics. From time to time, he has been deluded to the contrary, temporarily, by the advertisements of publishers. These promise to put one on intimate terms with the queen of the sciences, in painless lessons, so to speak. But, *Mathematics For The Millions* only resulted in a million headaches; while a simple treatise like *Mathematics Made Plain* almost brought on nightmares.

As dumb as he is, however, at computing formulas and equations, this observer has enough sense to know that 4 comes after 3, 27 follows 26 and 95 can't be anywhere else but right after 94, etc. All the probabilities indicate that this serial nature of the order of number progression proceeds with unbroken continuity from zero to infinity. In other words,

27 never comes before 26, and 95 can't push in ahead of 94. It just wouldn't make sense. Besides, you couldn't use figures for anything if they jumped all over the place.

The average layman would hardly suspect that numbers have anything to do with anything else except more numbers. That is, that the only possible function of numbers is their relation to other numbers. Of course, there is the old saying that 'figures never lie but liars sometimes figure.' But then, bankers, business men and politicians do a lot of figuring and they are not all liars. At least, not all the time. So, the validity of that portion of our folklore, hinting at illicit variations in the function of numbers is questionable. So much for folklore. Now, let's get down to facts.

It is a well-known fact that engineers use numbers and do a lot of figuring with them. No engineer worth his salt would attempt to fi-

nagle around with his decimal points. He knows that the only result would be chaos on the job. For physical laws can't be violated. So, the engineer goes along his well-defined path finding the facts and arranging and classifying the quantities involved. We venture to guess, however, that but few engineers and scientists have straightened up out of their rut long enough to take a good long look around at society and ask themselves this question. Is it possible to apply numbers to social problems? A few of them have, and their work stands out like a beacon light for the more faint-hearted.

Most of the scientific gentlemen, however, are just like all other Americans when it comes to social problems. They find a ready escape from the social obligation to do anything about these problems in the age-old, hoary myth that 'You can't change human nature.' If any abstract concept has served the Price System well, this one has.

Any Red Herrings Today?

According to its proponents, it was written on creation day that mankind shall be grouped into two classes, masters and servants, riders and horses, chisellers and suckers. The rule is as severe and inflexible as the Draconian Code. No matter how much their hearts may bleed for humanity, they say they can't do anything about it. 'You can't change human nature, amen.' Press, pulpit and classroom have enlarged upon this theme for

ages. Until the lion decides to lie down with the mouse, it is hopeless. All we can do is try to reform the lion. Oddly enough, it has always been the lions on top of the social pile who proclaimed this fable.

It never occurred to anyone until recently to analyze this myth. Then it was discovered that what was being camouflaged by the term 'human nature' was actually nothing more nor less than human behavior. After this, the woods began to thin out. Most any bright person can understand that people behave according to the rules of the particular social system they happen to live under. Also, that as conditions and rules change, human behavior responds also and accommodates itself to the altered circumstances. There's nothing inflexible about human behavior at all. Its outstanding characteristic is its resiliency. But it has been to the interests of the chiseling minority of people to preach otherwise.

'Oh! So now the cat is out of the bag, eh?' you say.

'It's the chisellers who make it tough for the rest of us. Well, the dirty so and so's. We'll get even with them, all right.'

'No, that won't do you any good, brother,' we reply. 'The only reason you're not a good chiseler is because you haven't got enough of that type of smartness. That goes for all the rest of us too. Come on, now, be a sport and admit it.'

'O.K., pal, I guess you've got something there. But, nevertheless, something has to be done,' you say.

'You're darn tootin', and something is being done about it,' we come back.

'Remember, we were saying something about numbers back there a bit? Did you pay any attention?' 'Yes, but what have numbers got to do with getting even with chiselers,' you might retort. 'Plenty,' we'll say. 'In fact, thereby hangs this whole story. So, if you will please tag along with us another block or so, we will show you the relation of numbers to human behavior. We've seen it work in several instances. And, boy, does it flatten the chiselers. The case we have in mind is only a minor example of the application of the function of numbers to social problems. But the principle is sound, and maybe we can find bigger ways to apply it. Who knows? Let's get along with our story.'

Two Cows For Every Family

One day, along the tail end of last winter, the warden and I decided that it would be nice to have a juicy steak for supper, for a change. Naturally, it fell upon this observer to rustle up the steak. The locale of these events was on the north side of Chicago. As everybody knows, Chicago is the center of the meat industry. It would seem, therefore, to be no problem to get a nice steak. Center, or no center, buying a steak legitimately in Chicago today is an adventure in the mathematics of chiseling. Remember, we said 'legitimately.' That means in good old 'free enterprise' way that business is always bragging about,

where you walk right in, pick out your steak, plump down your dough, and walk out again.

That's the way they do it on the black market, nowadays, it's said. In addition, the black market doesn't demand red points. It is just a case of pay the price and no questions asked. Isn't that the essence of free enterprise? We wonder if it is possible that 'free enterprise' has gone underground for the duration. It's a cinch there is nothing so free about it above ground. That includes the consumer's point of view, too.

First, you have to manipulate that European device for dividing up a scarcity, your ration book. 'Count your red points, count them one by one. Then you'll plainly see how badly you've been done.' After determining that you have sufficient scarcity tokens for a good sized steak, you drift off hopefully down the street. You don't just walk into the first butcher shop you see. Unless there's a mob gathered in front of it, it is a sure sign they have nothing on hand but cereal-stuffed sausage, frozen fish and oddments of meat products that nobody seems to buy when they're in their right mind.

So on this occasion we drifted down the street, looking for a mob. Right in the middle of the first block, we saw a crude sign pasted on the door of a butcher shop. It said: 'Open at 2:30 P.M.' The sign must have just been placed there, for only two women were standing in the doorway. By our watch it was 2:10. We decided to stay there and try for a juicy

steak. Two and one always makes three, so since we were the third person to notice the sign and stand in the doorway, we figured we ought to be third in line.

Page Mr. Einstein

It soon became evident that our moral evaluation of seniority rights meant nothing but zero in the face of a determined band of women, bent on getting meat. Before we had really settled down in our shoes for the twenty minute wait to be over and the shop to open, our little nucleus of three had grown to ten. This, by some magic of adsorption from the passing stream of pedestrians, soon grew to twenty.

By this time a sad discovery forced itself upon our consciousness. Instead of being third in nearness to the door, we were now about sixth. Somehow, we had been outmaneuvered. By some fancy shoulder work and clever manipulation of a loaded shopping bag, a smallish, elderly 'mom' got in front of us. Another determined 'mom' with a fake fur coat was making steady progress in an oblique direction, with the same object in view. How the other 'moms' got in ahead of us, will forever remain a mystery. But there they were.

Our little band of twenty soon doubled in size. With each increment of numbers, this observer's position in relation to the door seemed to worsen. As the minute hand approached 2:30 P.M., he was reduced from sixth to ninth. All this happened without his having budged an

inch. Upon reflection, we've decided that maybe that's how it happened. They say there's always room for one more. While we stood fixed and determined like the Maginot Line, the chiselers deployed around our flanks. They flowed toward that butcher shop door like a process of osmosis. There was something inevitable about it, something that defied the rules of equity.

Or perhaps it was a case of behavioristic tropism. We remembered a physics professor who used to tell about chemical tropisms in nature. As we recalled, he had said that a tropism is the inherent tendency of a living thing to respond definitely to an external stimulus. He would illustrate the idea like this. Suppose a person to go out on a hot summer day and lie underneath a tree. The air is still, not the slightest trace of a breeze blowing, and the sun is shining fiercely. Well, you lie down on your back underneath the tree and look up at the leaves. Strangely, in spite of the still air, none of the leaves seem to be still. They're constantly moving back and forth, sort of waving on their stems. The professor used to say that every leaf on the tree is maneuvering for a better position in relation to the sun.

That's just exactly how this crowd behaved. They were maneuvering for a better position in relation to the butcher shop door. As the clock almost reached 2:30 P.M., the tension mounted. One could see the lines become a little grimmer on people's faces, eyes became a little narrower

and a calculating light entered them. Each person was figuring what to do when the door opened. He, or she, was planning his strategy to get to a certain position at the counter where he guessed that chances to be waited on first would be best. The crowd was fast becoming a mob, all bent on the same thing, but a mob in which each person's interests clashed with the other's.

Then, suddenly, the fat lady cashier sidled up from one side and flung the door open. Everybody rushed in. Some headed for the section of display case containing the shortribs and roasts. Some, including this foolish observer, headed for the section where steaks were piled up on glistening white pans. The smartest headed for the cash register. For, believe you me, brother, where the 'do re mi' accumulates and is piled up the highest is the best place to chisel into the river of commerce, whether it's for a sale or a purchase. That's the Price System for you.

'I Got Here First'

In no time at all, the butcher shop was full of women. Only two males of the species had been nuts enough to enter this free-for-all. No doubt the other sap also regrets his foolhardiness in trying to compete with a bunch of anarchistically determined 'moms.' It just isn't in the book. To make matters worse, they looked at this observer with looks that said: 'Why ain't you out in the Pacific

bearding Japs instead of in here trying to beat me out of that steak?' They had a way of making you practically feel that you were guilty of taking steaks out of the mouths of babies. At that, maybe they do feed their babies steak. Else, how did they themselves grow to such Amazonian behavior.

This was the first flock of impressions forced upon us as we stood hopefully in front of the pile of steaks. Boy, those steaks looked good. The meat was just the right color. Little stringers and speckles of yellow fat branched out all over the surface. This is a sure sign of tender meat. If it is a solid red, beware, for that means toughness. So help us, we hadn't seen steaks like that for a year. Some woman off to the side observed: 'What good looking meat that is.' We were afraid to turn and look at her for fear some clever, chiseling 'mom' on the other side would use that as a pretext to slip in ahead of us. They do it in the darndest ways.

There we stood, trying our best to look like an old customer. There were three butchers behind the counter. Every time one of them came up to our end of the showcase, some woman would say: 'I got here first.' Another one would say: 'Why, I've been here for 20 minutes.' Then there would be some unintelligible muttering in the crowd. The butcher didn't seem to notice a thing. He'd say: 'All right, Mrs. Murphy, what's yours today?' Or: 'Oh, yes, Mrs. Smith, what was it you wanted, now?' It

was obvious there was some kind of a technique to getting waited on. Either you had to phone beforehand, or you must have been one of the butcher's school day chums, or you had to know the secret sign. There was something that we didn't have, for in spite of our best efforts to call the butcher's attention our way, he didn't even see us. It was uncanny.

Joe Sent Me

Some woman to the rear of us said: 'It's a shame. They're waiting on the last that came in first.' Another said: 'Yes, they're picking their customers.' Still another said: 'You have to know somebody in this place.' A tiny little thing right next to us said: 'I don't see why they don't use the number system. That makes it fair for everybody.' We looked down and blurted out: 'What's that?' 'Why,' she replied, 'Don't you know? You take a number off the hook by the door as you come in. Then they wait on you in turn, when your number comes up. That's the way they do it in the bakery next door.'

A great light seemed to dawn. We pushed it back resolutely. This was no time for mental speculation. We were here to get steak. At that thought, our courage rose to a new high pitch. The butcher came close. We spoke up loudly: 'Say, mister, I've worn out two pairs of shoes already trying to get a steak. I was one of the first ones in here. How are chances for two T bones?' Maybe it was the word 'shoes' that did the trick. For his majesty, the butcher, gave this ob-

server a sly look of recognition, a slyer grin and said: 'Two?' We said: 'Yes, two good ones.' He went into action and in a shorter time than it takes to tell about it, we were served. We wiggled our way out of the crowd to the tune of envious glances, paid for the meat and hit the sidewalk outside. Within the butcher shop, turmoil mounted.

Once outside with a freshly rolled cigarette, we stopped to add up the score. It had taken exactly one hour and five minutes of concentrated chiseling to get the plunder. We stood in the crowd outside for 20 minutes. That was bad enough. The 45 minutes of nerve depleting tension inside, trying to get waited on, almost did us in. Another 10 minutes, and we would have settled for a hamburger. The next time we see a mob in front of a butcher shop, we're going to have corned beef hash for supper. That is, if we can find a can of corned beef hash.

Take Your Turn, Sister

At this point, the words spoken by the undersized 'mom' about the number system came back to mind. We looked up and we were standing right in front of the bakery next door to the butcher's. So, we ambled right on in, and looked around. While we were doing this, two 'moms' from the butcher shop came in and took numbers from the hook by the door. That's a mistake we never repeated; that is, going in, looking around first. As a result these two women got ahead of this observer, and we found

ourselves 'arranged' two numbers farther down the list.

We went briskly over to the hook, took the next number; it was 95. That meant we came right after 94. Ah! What a grand and glorious feeling now suffused us. We had a guarantee that no chiseler could cheat us out of our turn. It became possible at once to become benign and kindly disposed toward our fellow shoppers. After all, they did get in ahead of us. So they were actually entitled to be waited on first. Those who came after us would be in the same boat in relation to us as we were in relation to the earlier comers. First come, first served, second come second served, etc. Could anything be fairer?

There was no crowding, no jostling, no devious maneuvering for position. No lies about who came in first; the figures simply couldn't lie. One could relax, lean against the back wall, even sit down on the bench and contemplate the scene with impersonal detachment. People did just that, confident that when their turn came, nobody could beat them out of it. Some of them were the same people who had been next door in the butcher shop a few minutes before, lying, cheating and chiseling to gain a preferential advantage over other people. Now they looked upon each other without calculation or malice. They chatted pleasantly and waited patiently for their turn. How magical the change seemed.

You Can't Do It With Clubs

Yet, they hadn't changed at all.

Tomorrow these same women will battle each other tooth and nail in the same butcher shop. When they enter the new environment of the bakery, with its orderly operating rules, they will immediately become orderly, behaved people. These same people who will be the most ruthless and conscienceless chiselers in the butcher shop will be the first to protest sternly against any attempt by any one to violate the orderly operating rules in the bakery.

The whole atmosphere of the bakery was better than that of the butcher shop. The girls behind the counter worked more efficiently. They didn't have to try to curry favor with old customers; they didn't have to pass over strange faces; they didn't have to be on edge trying not to hurt any one's feelings. They didn't have to worry about creating good will or minimizing ill-will toward the bakery. The number system solved all that. They just went ahead with their work, filling orders, one after the other.

'Number 94, please, what will you have, lady? One dozen red cross buns? What else, please? That's all? That will be 36 cents, please.'

'Number 95, please. What will it be, mister? One dozen butter rolls, mixed? What else? That's all? That will be 41 cents, please. Number 96, please.'

But then we had been waited on and were out of the store before we knew it. Now, can you beat that! Like the Chinaman said when he saw an automobile for the first time: 'No pushee, no pullee, go like hellee!'

Arrange and Classify Quantities

The whole operation was as smooth and pleasant as an ice-cold double-malted on a hot afternoon. Chaos in one place and order in the other, and the same 'human nature' in both places. Who says you can't change human behavior? Whoever it was that started this myth, he was a liar by the clock. So are those who perpetuate it. Human behavior is changing all the time, right in front of our noses. In fact, if it weren't for the resiliency of human behavior, the rigidity of social institutions would have made a complete mess of civilization a long time ago.

As we made our way toward the jalopy, another idea seeped in. A little voice inside our head said: 'I bet that some engineer had something to do with introducing the number system into retail stores.' Another little voice said: 'Maybe, but it does not solve anything. It only effectuates an equitable dispensing of an artificially enforced scarcity. If technology were freed from the tyrannical restrictions of the Price System, it

would soon produce such an abundance of everything that the shelves would be loaded in every retail store in the land. Then you wouldn't need any numbers system.'

'That's right,' the first voice said. 'But you are still existing under the Price System, and technology is still in chains. The point here is that the function of numbers is to arrange and classify quantities. That's mathematics, and mathematics is an important part of science. The application of the function of numbers, even in a small way, to minor social problems illustrates what could be done by the application of the scientific method as a whole to our major social problems.'

'I guess you have something there,' said the first voice. 'I'm willing to go along on that basis.'

In perfect harmony the five of us (this observer, the two little voices inside his head, and the two T bone steaks) proceeded happily homeward.

Nota Bene: The steaks were wonderful!

ONE BORN EVERY MINUTE

Suggestions to the tune of 8,500 made by 3,800 employees of Consolidated Vultee Aircraft Corporation saved 16,000,000 man-hours of labor in 1944. The Corporation rewarded these faithful 3,800 workers with bonuses, etc., totaling \$110,520. Assuming the average man-hour cost of labor to be \$1.00, the corporation made \$15,889,480 on the deal. Of course, that old gentleman with the whiskers, known as Uncle Sam, will probably transfer some of this wind-

fall to his own coffers by way of renegotiation, etc. But, it's still a good deal. (Data from *Steel*, Jan. 22, 1945.)

'The public not only likes to be fooled, but is perfectly willing to pay for it.'

—Olin Miller, in his column 'In passing,' in *Chicago Sun* 12-28-43.



Photo: Courtesy Harry A. Lowther Company

're one man and buy the other three,' says the maker of this belt-driven saw. This strikes the theme of a picture story, the displacement of skill and man-hours by advances in technology. In the good old days, trees were felled by crews of men with axes and hand saws. Now one man fells a 24" hardwood tree in minutes or a 11" pine in 15 seconds. The saw is powered by a 6hp gasoline engine and cuts up to 20 cords of wood a day. A great amount of lumber is saved because of low stump cutting.



Photo: Courtesy Harry A. Lowther Company

Filing, bucking, limbing, it's all the same as the blade operates in any position. Perfectly balanced with rolling wheels on needle bearing hub assemblies the saw can be trundled almost anywhere. Technology says: the death knell of toil, hand tools and special skills in the woods. In 1943 total cut and wastage of timber exceeded growth by 50 percent. 'Free enterprise' has cut down 5/6ths of America's forests. Technology points the way to greater waste or conservation. It's up to us.



U. S. Army Air Forces P

This is about the last word in propellor driven fighting planes, the Northrop P-61 Black Widow. Skills already being displaced here. The pilot only flies the plane. Two gunners, fore and aft, share remote control of 50 calibre guns mounted in the turret. Line of fire is adjusted by computing mechanisms. Control can be shifted back and forth between the two, or turned over to the pilot for strafing ground targets. P-61 engine requires special mechanical skills to maintain.

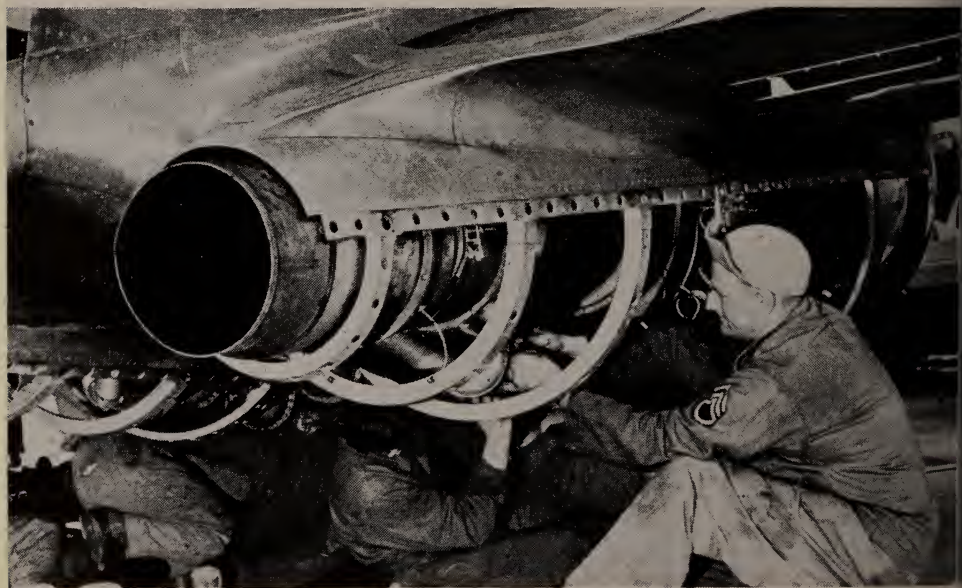


Photo: Courtesy General Electric Com

Not so with this turbo-jet engine on the Bell P-59A jet plane. Maintenance and repair takes less than 1, the time, labor and tools necessary with a reciprocating motor. Four men can pull both engines on a plane and install new ones in a day. Eleven bolts hold the entire assembly on the plane. Jet engines require warming up. A minute after the starter button is pressed the plane can take off. The jet motor is blasted an awful hole in the skill and man-hours of the airplane mechanic.



Photo: Courtesy Automotive War Production

ve years ago North America witnessed the first successful flight of a helicopter. Today, war helicopter 6 is in mass production. Helicopters fly in ways impossible for conventional and jet planes, such as, take-off and land vertically, fly forward, backward and sidewise, or hover over any given area. The main rotor on top gives the craft lift and lateral motion, the tail rotor acts as a rudder. A single air-cooled engine powers both rotors. Less skill is needed to fly this craft.



Photo: Courtesy United States Rubber Company

ne advance making R-6 possible is this lightweight, helicopter cabin framework. It's made of fibreglass, laminated and reinforced with thermo-setting resins and weighs half as much as aluminum. This material's great tensile strength, is an electrical non-conductor and is immune to gasoline, oils, acids, alcohol, alkalis and fungus growths. It retains its properties in the arctic or the tropics. Technology conserves irreplaceable metal resources while reducing skills and man-hours.



U. S. Army Air Forces

Here's one big reason why the Luftwaffe is no more. It's the Franks Flying Suit, invented and developed by Wing Commander W. R. Franks of the RCAF. The suit counteracts the force of gravity and centrifugal force by applying an equal air pressure to the pilot's abdomen and legs during sharp pullouts and turns. This avoids "blackouts" by preventing the blood from leaving the brain. It makes Superman-like aerobics possible; and transfers the physical tolerance limit from the man to the machine.



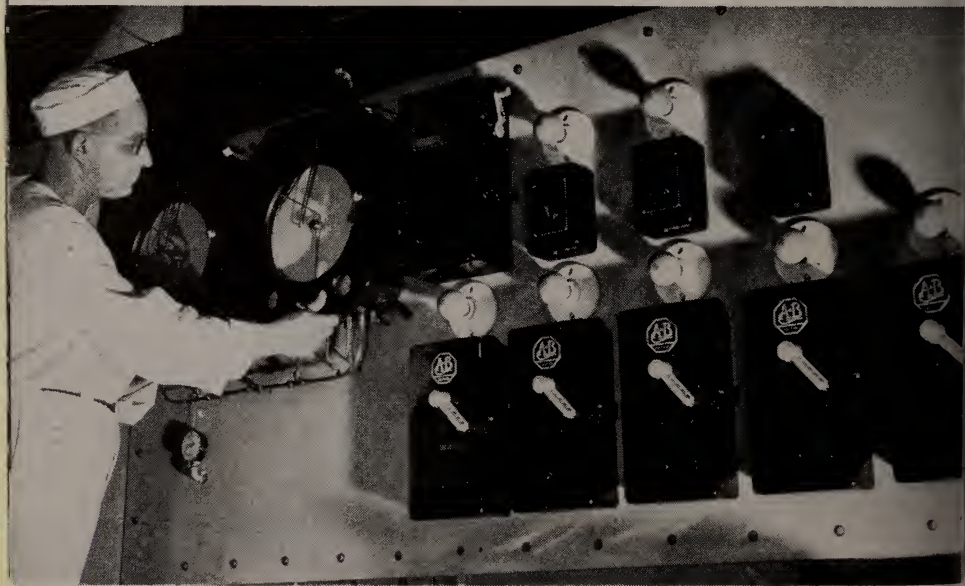
Photo: Courtesy Goodyear Rubber Company

What has technology wrought here? They say it's an experimental airplane tire, over 9' high. The inner be alone weighs 250 lbs. and the assembly of tire, tube and rim weighs over one ton. This is the largest and heaviest tire ever produced. A picture like this makes you think of Technocracy's giant Flying Wing. Maybe this tire is big enough and good enough for the Wings of the Continent. Who knows? This shows a not lack of tire technology holding up the Flying Wing. Then, what is it?



Photo: Courtesy United States Rubber Company

Technology smooths the way with an immense three dimensional terrain model of Attu Island in the Aleutians. Seizure of the island was preceded by a study of the model. These collapsible rubber contour models are based on aerial photographs, reconnaissance reports and pre-war maps. Technology reduces the cost of invasion in toil and lives. The greater technology becomes the higher goes the production ability, the lower goes the scarcity, and the more the Price System muddles around. Catch on?



U. S. D. A. Photograph by H. J. ...

Who would ever have thought that that autocrat the Chef would ever be robbed of his skill! Yet it is the way. Here he has turned into a reader of graphs, a taker-down of notes and a watcher of signal lights. It's the control station of a tunnel dryer in a carrot dehydrating plant. Carrots are washed, peeled, diced by machines, then blanched to kill enzymes. Temperature, humidity and timed motion through the dryer are all automatically controlled. The whole plant is mechanized. Not much skill here.



New York Herald Tribune Photo

re it is again. This machine displaces both man-hours and skill. It makes 3500 sandwiches an hour as compared to the 250 turned out by skilled sandwich makers. It was perfected by the old gentleman in the picture and it is used in New York's school-lunch program. The under slice moves from the stack container on the left, past the funnel spreader in the center (butter, cream cheese, jelly, etc.), to the stack container on the right for the top slice. Wonder how they'd do it with hamburger?



Official Photo U. S. Air Forces

This type of social progression we have been illustrating is unknown in China. There they still operate as their honorable ancestors thousands of years ago. Human toil and hand tools are the only methods of production available; consequently he has scarcity. Here they reduce stones to a useable size with hammers, in building a B-29 base. Not much skill needed here, it's true; but what a lot of man-hours and low scale of production. You can't produce abundance with scarcity methods.



Here is the greatest skill and man-hour killer up-to-date. It's the IBM Automatic Sequence Control Calculator. It solves almost any known problem in mathematics correctly out to 23 figures and if an error is made in the process the machine will stop. A problem which required four experts 3 weeks to work out with ordinary calculators was solved in 19 hours. Whew! There's no space to explain more; besides we're stuck. But, how about applying it to measuring some of America's social problems?



Photo: Courtesy Norfolk and Western Railroad

And here's what it's all about, North America. We mean the physical America of industrial equipment, resources, rivers, mountains, valleys, prairies, lakes, people, etc., the land itself. It's worth working and striving for to bring its little Price System social institutions up to the stature of its great technology. Here's a scene from the Roanoke Valley in Virginia. We may sing 'carry me back 'till we're green in the face, but events are driving us forward to the New America, willy-nilly.

The Nation Notion

People Would Like to Be People

By H. V. Wilkie

Moronia Forever

ESENTIALLY a nation is only a clan in long pants. From this beginning we come by easy stages to a world divided into a hodge-podge of vari-colored patches, nations. There really is no such thing as a nation in the usually accepted sense that a nation is made up of human beings who are fundamentally different from their neighbors. The physical differences are purely superficial, such as skin pigmentation, modes of dress, types of handicraft, etc. The so-called national characteristics of one group of people which are supposed to distinguish them from all others are purely psychological, a batch of carefully nurtured notions, both about themselves and everybody else. The traditions, folkways and behavior patterns accumulated by individuals within a given national environment drop like molted feathers when transplanted to new surroundings, although groups of transplanted nationals tend to cling to a homeland hangover for varying lengths of time.

It is easy to recognize several of the 'national characteristics' which people fabricate and drape around themselves and others, with the absolute conviction of reality. One of the beliefs of every nation is that its people must have anywhere from a

mild distaste to a violent hatred of some other nation. Another thing each national believes is that his particular nation has some abstract thing called a culture which sets that nation apart from the rest of all mankind. Nearly all have some religious preference which gains for them the most benign smiles and approbation of Diety. All are animated by the belief that it is their destiny to populate the earth, so each one hangs a weight on the safety valve, and lets the birth-rate climb through the end of the tube, apparently with the intention of beating their neighbors to it, and swarming all over the place. Nearly all have some type of political ideology guaranteed not to rip, tear, warp or run down at the heels, which really sets them on a pedestal above the balance of struggling mankind.

Take the whole mass, stir liberally, garnish with a generous portion of patriotism, heap it up nicely, stick a flag in the apex, and there you have it—a nation! One of the peculiar things about the whole set-up is that you take a Hungarian and a German and a Romanian and a Slav, throw in a Chinaman and a Patagonian for good measure, and set them to work together on a job, away from the psychological aura enveloping their homeland, and they automatically become just people engaged in a common undertaking.

Judging by the results portrayed in history's bloody pages, the consequences of this highly developed nation notion are anything but salutary. Do we take some sort of sadistic delight in hitting ourselves on the head with a hammer? Is it inherent idiocy which causes mankind to continue this type of behavior?

I Am The State

Starting with the old man as the head of the family, the chief as the head of the clan, the feudal baron as the head of the feif, the king as the head of the state, and on up to the present day political ideology complex, we find the element of Big-Shot-Itis woven throughout the whole pattern. Also examining the physical condition prevailing throughout this progression, we find the dominant characteristic of scarcity. Where tid-bits were scarce, luxuries rare, and subsistence hazardous, who got the subsistence, the luxuries and the tid-bits? It's easy to see that if the old man has the biggest club, and is quick on the draw, there will not be too much argument as to where the choicest morsels fall. However, as the earth ceased to be an open hunting ground, and populations settled and congealed and multiplied, the problem of control indicated a different technique. From the beginning until this day and date (see your local calendar for particulars), it has been the function of the Big-Shot, i.e., the ruling classes, in all places, ages and climes, to be the arbiter of who gets what.

To state the case in its simplest

terms, if you have twenty people and fifteen pairs of shoes, you have scarcity. If you carry the same thing in varying ratio throughout the list of human needs and desires, you have an economy of scarcity, so-called, which in reality is a physical lack of enough goods and services to go around amongst the population of a given area. In such a case the first tendency of the great unwashed was to plunder their neighbors, an occupation that has held unwaning popularity throughout the ages.

In later years it was found that an unrestricted indulgence in this type of activity placed too much emphasis on the plundering and too little on supplying the plunder, making the pickings a bit thin for all hands. At this juncture, let us see just what occurred. First, let us recognize and emphasize that the actual environment in which most men lived was one of scarcity; not enough to go around, therefore, some one had to do without. In a condition of this kind, for the strongest to grab the most meant continuous strife. Also, there were notable hazards involved in each clan, dukedom, etc., extracting a living by force of arms from its neighbors.

So we invented the nation. This provided an orderly method for the distribution of the scarcity in any certain area. Fundamentally nothing was changed but our psychology. Still there were not enough goods and services so that all might enjoy a reasonable equality. The timid still shivered in poverty, while the more

predatory lolled in luxury. It was much more agreeable to keep the folks busy tilling, herding, mining, weaving, building, etc., and let trained fighters do such warring as was deemed necessary.

The trick of pacifying the masses in this type of activity, so that their labors might redound to the well-being of the classes was where the psychology came in. Work, loyalty and obedience were praised to the skies. Poverty and honesty became twin virtues which, with the invention of organized religion, gained for their possessors future salvation and heavenly mansions in inverse ratio to the meagerness of their earthly estate. The mass of psychological nonsense which accumulated in relation to the nation consciousness was not necessarily an upper class product for lower class consumption. The lower classes joined with the upper in glorifying this kind of stuff, largely as a comforting self-justification for being lower classes.

Chisel or Be Chiseled

It must be understood that there is no question of moral right and wrong involved in this process. The fact remains that where there is not enough to go around, some one has to do without. The only question is who? While philosophers moralize, and dear ladies drool sympathetically, those who are capable see that they get theirs, and those who are incapable go without, on down the line in the ratio of their incapacity. The only point at issue in the so-called 'class

struggle' is a sort of wishful thinking that the poor and weak, the hard-working and downtrodden, be elevated to the getting position; and the strong and capable demoted to the go-without department. Peculiarly, wherever this has been attempted, it doesn't work. Like the law of Proportional Aggregates, the big stones do not reach the top by forcing their way up, but because the little stones insist on squirming their way down to a comfortable repose at the bottom.

Therefore, the so-called class struggle becomes a fine conversational medium for speculation, and has some utility as an emotional relief valve. No social equality can actually occur anywhere until a dynamic equilibrium between population and production resources has been established in a given area. Assuming this condition to exist, it will then be found that the chiseling practices of the Price System (the anarchistic buying and selling and production for profit) would be inadequate, and that some engineered design for distribution would be required.

A nation, therefore, might be defined as the boundaries within which a given group of ruling class elements are able to maintain control. This internal operation might also be called the function of a nation. The original national boundaries were established occasionally by natural barriers, but more generally by the ambitions of the founding fathers, each group or founder staking out as much as they could successfully operate. These boundaries usually frayed

at the edges, moving back and forth, appearing and disappearing with the fortunes of war, royal marriages, swapping and such like manipulations. Only a few have managed to maintain any settled position for an appreciable length of time.

Periodically it has been the dream of some smart group of operators to take over on a world-wide basis. Their reasoning appears to follow the line that they have become so deft at exploiting the nation notion within a small area that it's a shame to keep such talent confined to the boundaries of its origin. Occasionally, nations find themselves with manipulators who have lost their touch, or who have found the picking so easy that they have become soft, in which case their neighbors move in and take over with neatness and dispatch. And that, broadly, is how the thing operates, scarcity being the underlying and dominant factor.

The medals on the breast of a Nazi General are supposed to proclaim to all and sundry the unequaled virtues and exploits of the bearer. So it is with the mass of psychological fabrications which we have so carefully wrought and draped all over our nation notion. Factually, there is no possible escape for any nation from poverty, malnutrition, greed and corruption internally; and power politics, wars and bickering externally; until it scrapes off every layer of its psychological over-burden and deals in an objective manner with the physical facts which dictate exactly what can and what cannot be done.

Area Technology Dictates

What are the facts? The number one fact is that the social pattern in any area must be conditioned by the amount of natural resources, the installed technology, and the potential energy available to operate equipment. Hand in hand with this first consideration must go the understanding that any land mass will support in reasonable health and security only that number of population which the natural resources, energy and technology can supply with goods and services. Land areas that have violated this principle can manifest only a meager social status and any attempt on the part of your Uncle Sucker to be Lady Bountiful to the world can only result in more of the same, unless this fact is intelligently faced.

Having once established a dynamic equilibrium between the population and the physical fundamentals, only by increasing the installed technology can any increase in the population occur, without degrading the social pattern. As long as human beings insist on propagating beyond the ability of their environment to support them, all human philosophies, doctrines, beliefs, wishful thinking, brotherly love, and ecclesiastical unction are pure and unadulterated hogwash. The only possible social stability must be geared to population growth control. This poses a question of choice. What do we really want? A world fit to live in, or the free and untrammled propagation

of the species, regardless of the consequences. If the politicians at Peace Tables assembled are interested in Peace, let them call in the scientists and engineers to do their map making for them, and give the nation notion a perpetual holiday.

It should also be obvious that from an operational standpoint various land masses must be viewed as such and in relation to the inclusion of natural resources, not in relation to any traditional, political national boundaries. Recognizing the North American Continent as one land mass, *Technocracy Inc.*, on its own initiative, has performed the necessary function of surveying and analyzing the natural resources, energy and technological potentials on this Continent. *Tech-*

nocracy Inc., being what it is, the mechanism for applying science to the social order, took the next necessary step. It designed a type of social operation and controls that could be employed to successfully operate the production and distribution of the potential abundance existing within this Continental area. What type of design Technocracy might prepare if called upon to extract the rest of the world from its chaos would be pure speculation, because such a call has never been made. The design that *Technocracy* has prepared for the North American Continent has never been factually assailed, and is a matter of record. It will require none of the claptrap of the nation notion either to install or to operate it.

WHEN DO WE EAT?

'Nobody seems to be able to get the figures, but we know that warehouses in every part of the country, including many not ordinarily used to store food, are packed. In many cases the food is spoiling. If some of this food could be gotten out of storage there would be more now for the table.' H. Wayne Clark, President of the National Food Brokers Association, at a conference of food brokers in the Chicago marketing area, held at the Stevens Hotel, April 7, 1945. (As reported in the *Chicago Daily News* of that date.)

'I understand,' Wherry said, 'that you buried something like 100 carload of potatoes in the ground somewhere down South.'

'Yes, sir,' said Olmstead. 'When the early potatoes came in in 1944, we had to buy potatoes all over the country

to support the price. When you buy a commodity, you have to do something with it.'

Testimony of Lt. Col. Ralph W. Olmstead, WFA director of supply, at a hearing of the Senate Food Investigating Committee in answer to a question by Senator Wherry (Rep. Nebr.). (As reported in *Chicago Daily News*, April 4, 1945.)

60,000 hogs and 20,000 cattle are yearly passing through the black market—of that district (Seattle, Wash.) 'In our area the illegal trade has become so prevalent that the question with us is, "Who isn't in the black market?"' W. S. Greathouse, President of Frye and Company, Seattle, Washington packers, before the House Food Investigation Committee in the Stevens Hotel, Chicago, Illinois. (As reported in the *Chicago Daily News*, April 16, 1945.)

Primer Of Technocracy

By Education Division 8741-1

The great majority of people who come into Technocracy are average, normal citizens from all walks of life. Most of them are accustomed to things as they are and concerned about it. They know there is a Dutchman in the woodpile somewhere, for they never seem to be able to get ahead. Others have hacked their way up to Technocracy through a jungle of economic and social preconceptions by a process of intellectual elimination, or growth. Both of these types are concerned about themselves, their families and their country. They have lost all confidence in the political method, but do not see how social problems can be solved in any other way. They are sincerely looking for the correct answer. These are the bulk of the human components of which the great organization of Technocracy Inc. is formed. They are all typical, average Americans.

All-Voluntary and Racketproof

Another point wherein Technocracy Inc. is in complete contradiction to all Price System organizations is the financial basis upon which it operates. The dues are extremely low and hardly suffice to meet the fixed expenses. How then is it possible to expand? All activities are carried out on a completely voluntary basis. No member or officer receives any financial compensation of any kind, except an occasional full-time Secretary in a few of the larger Sections, and the small full-time staff at CHQ, who are paid, not a salary but a subsistence wage. All routine and expansion activities of the Sections are carried on by members in their spare time after or before their regular work hours. It was considered impossible to build a large organization on this financial basis, because it was contradictory

to all experience. Yet it was done.

It had to be done on the voluntary plan, so as to keep the Organization free from all political and nepotistic taints incidental to monetary considerations. The result is that Technocracy Inc. is singularly free from all the various types of non-feasance, misfeasance and malfeasance, common to Price System organizations. If the organization ever became commercialized, it would go off on a tangent, the Body of Thought would be discredited, and the social program perverted. So the structure of the Organization was carefully designed to follow the method of science, and the voluntary activities plan was introduced. It can be said that Technocracy Inc. is racketproof because there is nothing in it to take over, except a lot of unpaid work.

In order to make the design of the Organization effective, a new prin

ciple of organizational control was adopted. This is the vertical-functional principle. You will not find it operating to any extent in any Price System organization. Many of them use the vertical method of control, which can be concisely stated as the one-man or dictatorial method. Every one is familiar with the 'Boss' idea in politics and business. The concept of dictation is opposed and foreign to the characteristics and methods of science, and Technocracy, wherein the metrical method of arriving at decisions is dominant throughout. By this we mean that all policies and decisions are based upon an examination of the relevant facts. No one's arbitrary will is allowed to prevail. The facts determine the decisions necessary. Dictation can exist only in a non-scientific set-up.

Function means the most effective use and operation of anything. It has been known for a long time, but never put into wide operation. The fullest use of the principle of function means the scrapping of too many vested interests under the Price System. However, the principle of function cannot stand alone without designed direction. Note that we say 'designed direction.' This is opposite to uncontrolled dictation. An industrial plant may have many assembly and sub-assembly functions but still requires coordination and designed direction. This is the function of the chief engineer and his staff, theoretically at least, when they are not interfered with. An armed force has many branches with distinct functions, but still needs a general staff

and a Commander-in-Chief. So in Technocracy, there is vertical direction of functional application.

The functional attitude in Technocracy is the tool of the operational method of the Organization. One-half of Technocracy is in knowing its analysis and synthesis; the equally important other half is in carrying out the operations. The functional Technocrat exemplifies this truism. He participates fully in symbolization and in all the other activities of the Organization. After the demands of the Price System have been met, his time is devoted to Technocracy. The functional attitude is exercised in accord with the strategy, tactics and policies of the social program. In other words, it is not exercised haphazardly, but in a disciplined, unified manner. This discipline is self-imposed, not dictated. Technocracy has no ecclesiastic, economic or political control over its members. Any member is free to walk out at any time without fear of penalty. It is a voluntary Organization clear down the line. No officer of Technocracy ever says: 'You must.' He always asks: 'Will you?'

This is the greatest compliment one set of human beings can pay to another. It is a compliment to their courage and mentality, instead of a sop to their opinions and emotionalism. A functional Technocrat accepts orders and carries them out because he knows what the organization is organized for. He knows that those aims can never be subverted because they arise out of physical

realities. He knows that the paramount concern of Technocracy is the New America of Abundance, in which he will share equally with others. He knows that functionality merely means getting things done in the correct way. He knows that the direction must come from the top and the push must come from the bottom. Both are equally important. He knows that when he raised his

hand and pledged himself to 'do something about it,' he hired out to do a job, not to jump on a bandwagon. He is under no illusions. He knows that the top men in the Organization must also follow the design. He knows that America itself must follow designed social direction, or be lost.

Next Issue: Four Stages of Social Life.

AND IT'S ONLY COMMENCING

More small arms ammunition is used within the Continental United States in a 24-hour period in training army air forces than is consumed in all global theatres of operation in a like period, according to Col. W. E. Larned, commanding officer at Picatinny Arsenal.

In an address before members of the American Society of Industrial Engineers in Chicago, October 1, William H. Spencer, Regional Director of the War Manpower Commission, described World War II now in progress as '*this technological struggle for supremacy.*'

Records of the 14th Air Force operating on the Chinese front show that for the period between May to August, 1944 (4 months), the physical cost of sinking one ton of Jap shipping was as follows: 1.9 gallons of gasoline and 2.5 pounds of bombs. (As reported in *Flying Aces*, March, 1945.)

In 1860 the U. S. Signal Corps bought only \$2,000 worth of equipment. In 1943 the same organization's expenditures amounted to \$5,-

000,000,000. One plant, alone, between Pearl Harbor and June 1944 produced 4,200,000,000 feet of single conductor insulated wire for army and navy communications uses. Every month American factories are producing strand wire for the Signal Corps at the astounding rate of 175,000 miles. (Research Division 8741-1.)

'We have almost produced ourselves out of business. Machine tools produced since 1941 equal all produced in the preceding 40 years, and the average life of a machine tool is 20 years.' A. G. Bryant, past president of the American Machine Tool Distribution Association, at a meeting of the Association's executive committee in the Edgewater Beach Hotel, Chicago, Illinois. (As reported in *Chicago Daily Tribune*, April 18, 1945.)

Sumner H. Slichter, professor of economics at Harvard University, told a luncheon meeting of the Committee for Economic Development at the Blackstone Hotel on July 14, 1944, that within one year after the war between 20,000,000 and 22,000,000 men will 'hit the labor market. (As reported in the *Chicago Sun*, July 14 1944.)

Technocracy and Your Trade

The Printing Industry Worker

By Organization Division 8741-1

The first printing press was brought into North America around 1540 A.D. It was introduced by Antonio de Mendoza, Viceroy of Mexico (New Spain), and was used for printing religious tracts and pamphlets for distribution to the natives.

The first printing press in the British-American colonies was set up by Stephen Daye at Harvard College, in Cambridge, Massachusetts, in 1639. The first work turned out was *The Freeman's Oath*.

The Honorable Art

ONCE upon a time a printer was only a printer. He set type by hand and operated a hand press. From 1430 A. D., when Laurens Coster of Haarlem, The Netherlands, invented the first movable type to the opening of the nineteenth century, printing was in the handicraft stage. Beginning with the introduction of the first cylinder press in 1811, invention after invention revolutionized the old hand setting and printing procedures. Today the printing industry is mechanized. It is a diversified industry, covering the printing of newspapers, periodicals, music, and odd job work. The older hand methods have been superseded by newer machine skills. As we shall see later, these, in turn, are yielding to automatic operations.

The complete elimination of most skills is only a matter of the further development of processes already known. So it is not correct to call a printer only a printer any more.

Today he is a printing industry worker. Tomorrow he will be a combination of engineer, technician and artist; that is, those few whom the Price System will permit to be blessed with jobs.

It is not the purpose of this article to go into an encyclopedic discussion of the history and techniques of printing. There is plenty of material available in the public libraries on that. Rather, it is our object to illustrate the position of the printing industry worker in relation to America's overall social problem today. Nowhere else in modern industry does intellectual and physical labor meet on terms of more equality than in the print shop. The method of production is technical, but the product is ideas, *i. e.*, words and pictures. It would seem that some printers are a little better equipped to see through the mess that Price System operations have made of America than is the average one-track minded citizen, who seldom gets out of his comfortable mental rut.

If Poor Richard Could See Us Now!

Printing industry workers include hand compositors, machine operators, photo-engravers, lithographers, electrotypers, stereotypers, pressmen, bindery workers, proof readers, production managers and foremen, salesmen, office workers, artists, proprietors, etc. Printing is one of the twelve largest industries in the United States. According to *Employment Trends in the Printing Trades*, a publication of Science Research Associates, one out of five printing workers is a woman. Sixty percent of these are engaged in clerical work, nine percent are skilled shop workers and the rest are semi-skilled and unskilled workers. Among the four out of five men in the industry, 18 percent are white collar workers, 54 percent are skilled shop workers, and the rest are semi-skilled and unskilled.

The proportion of skilled workers in the printing industry is steadily declining. A study was made of this subject for the years 1931 to 1936 by the University of Minnesota. It was found that the proportion of printing workers requiring from 2 to 4 years' training dropped from 32 to 28 percent. Those requiring over 4 years' training dropped from 45 to 35 percent. The TNEC Monograph No. 22, *Technology in Our Economy* observes that: 'This decline in the need for extensive training was due to the installation of automatic and semi-automatic equipment.' The authors of the study by the University state in their report:

'In the printing industry operations on automatic machinery rose from 25 percent in 1931 to 45 percent in 1936.'

While this particular study was confined to the State of Minnesota and covered only a five-year period, there is ample evidence that it is indicative of a national long-time trend in the printing industry. Monograph No. 22 states: 'Technology not only reduces the *amount* of labor required to perform a given function; it also brings about a change in the *type* of labor required which often involves a displacement of skill.' The Monograph estimates that 7,500 of the first linotype machines in operation around the turn of the century had already displaced the skill of 36,000 hand compositors by a 'machine operation requiring less skill.'

Teletypesetters are now making inroads into the skill of the linotype operator. This device operates one or a number of automatic linotypes by remote control. It not only displaces the skill of the operator; it eliminates the man altogether. Another device coming into use, called the 'semagraph' is also deadly. The linotype is operated automatically by special coded copy typed on motor-driven typewriter, with special coded dots underneath the standard characters. A photoelectric cell scans the dots and actuates the casting machine.

Technology Is Impartial

In photo-engraving, likewise, ski

is being displaced by technology. The Hovey engraving machine makes zinc or copper engravings without using a camera or chemical etching. A photoelectric cell scans the copy and actuates a cutting tool on the metal plate. A median-sized newspaper cut may be made in about four minutes.

The bindery worker has not been overlooked by technology either.

Automatic and semi-automatic methods are rapidly replacing all hand operations. Not only are folding, stitching and trimming methods becoming more versatile and automatic, but these various processes are being combined into single units.

Hand-fed stitcher feeders, with a production of 30,000 stitched copies each eight hours, can be made to deliver 80,000 copies in the same time by the elimination of hand feeders and the addition of a suction feeder.

Single blade electric trimmers, with a production of 45,000 copies per day, are overshadowed by the automatic trimmers that trim 120,000 copies per day.

The folder-stitcher-trimmer can be operated by one folder attendant and one, or possibly two, joggers on the delivery. Stitcher feeders, stitcher joggers and pilers, trimmer operators and trimmer pilers are not needed. They are free—to look for another job.

Monograph No. 22 carries the point to its limit by stating:

The ultimate development would be the development of a photographic method of printing. This development awaits only

the invention of an adequate method of preparing the negative and an inexpensive sensitizer. If the photo-engraving process were to replace printing as the facsimile machine threatens to replace the teletype system, labor in the printing trades would be almost completely eliminated.

When It Rains, It Pours

The advance of technology in the printing trades is not restricted to the displacement of skill by automatic machinery. It constantly reduces unit labor costs, also. Unit labor costs depend on the factors of hourly earnings and output per man-hour. If hourly earnings advance more than output per man-hour, unit labor costs rise. When the reverse is the case, unit labor costs decline. In the newspaper and periodical branches of the printing industry, average hourly earnings rose 24.4 percent between 1923 and 1935. But output per man-hour rose 45.8 percent. Consequently, unit labor costs in this field declined more than 20 percent.

A study of the period between 1919 and 1936 covering output per man-hour, production, employment and total man-hours used revealed the following: The year 1929 is taken to equal 100. During the period mentioned, output per man-hour rose from 56 to 125; production rose from 51 to 96; total employment rose from 92 to 94; but, the true index of purchasing power, total man-hours of labor used, dropped from 91 to 76.

One more set of figures, and we are finished with the evidence. This record covers the entire field of printing, publishing and allied industries. In 1929 there were 27,200 plants in operation, and employment stood at 356,200. By 1939 the number of plants had declined to 24,900, and employment had declined to 324,500. On the other hand, the total installed horsepower of prime moving engines in the industry rose from 41,000 in 1929 to 54,000 in 1939. Secondary movers, such as electric motors, driven by plant-converted or purchased energy, rose from 650,000 horsepower in 1929 to 764,000 horsepower in 1939. More recent figures show that the industry used 860,000,000 kilowatt-hours of electricity in 1939 and that by 1944 this had risen to 990,000,000 kilowatts. So, the process is still going on.

This data we have quoted came from the Census Bureau, the U. S. Bureau of Labor Statistics, the National Industrial Conference Board, the National Research Project of the WPA and the Federal Power Commission.

Between the Devil and the Deep Blue Sea

There is no use trying to get around the facts, or the implications therein. It just can't be done. Here again, we see the familiar pattern set up by the Great Technology of America. Technocracy has traced this same pattern in most industries. It is evident that the gains made by or-

ganized labor in the printing industry are cancelled out about as fast as they are made by perennial advances in technology. This process places the printing industry worker in a continuously unfavorable bargaining position with employers. Consequently, while organized labor is necessary for the getting of immediate economic benefits and the protection of labor standards, it has no long range solution for the major problems of the printing industry worker.

Fighting the boss is a hand-to-mouth affair. You force something out of him this year, and next year he installs a new mechanism that takes it away from you. The process is like an invisible, indirect tax. It requires some analysis to illustrate. But, it is operating in every industry. Furthermore, its operation can not be stopped short of wholesale destruction of the industrial structure upon which modern so-called civilization rests. Neither proprietor nor workers are responsible. The trend was set up by the impact of technology. This impact is growing greater as the industrial revolution proceeds along its unidirectional irreversible course.

Both workers and proprietors are driven by the force of its compulsion. The former to defend and augment his constantly threatened and constantly dwindling total purchasing power; the latter to meet his constantly rising fixed obligations in the competition of business rivalry. It's a case of eat or be eaten.

Clang, Clang Goes the Trolley

In the beginning, science begat technology. Then technology begat the industrial revolution. This begat a host of new social problems, which the ancient Price System had never had to contend with before. Here is the fountain head of all the vexing problems of capital, labor and every other minority pressure group in America, including those of the printing industry worker.

It is obvious that no minority group can gain any preferential advantage except at the expense of some other minority group, or of society at large. This is the dog-eat-dog code of the Price System. We lay to ourselves the flattering uncton that this type of social system is a civilization. Nay! Not So! The word 'civilization' implies a well-ordered society. The Price System is actually a jungle wherein individuals and minority groups are compelled to climb to eminence over the crushed hopes and aspirations of their fellow men. They planned it that way.

The printing industry worker is jailed inside this Price System jungle, the same as all other Americans. There is absolutely no hope for a permanent solution of his problems within this framework. With the continuing impact of technology, printing processes will become ever more automatic, skills will become ever more simplified, productive ability will mount ever higher and higher, total man-hours of labor will fall lower and lower, and total mass

purchasing power *must* shrink ever smaller.

Because of these factors, the ability to distribute the products of industry will decline to lower and lower levels. A Price System is organized to produce and exchange goods and services for a profit. Any resulting distribution of physical wealth is delimited by the operating rules of the system. Physical wealth cannot be widely distributed by methods of exchange. The two functions are incompatible. Distribution is an accidental by-product of the merchandising exchange which is the true and only function of a Price System. The statistics of income distribution bear this out.

Faint Heart and Fair Lady

The dictum of science is that the only way to produce and distribute physical wealth is by the greatest possible application of technology and by working fewer men fewer hours. Obviously, a Price System cannot do this and carry on exchange for profit. One or the other must yield. We have been forced into the position of being compelled to maintain scarcity in the face of plenty or of going in for a thorough-going reorganization of modern society along engineering lines. Business may sabotage this necessity for a time. It may bury patents, restrict production and organize monopolies. *But technology will out.* It compels a constant rise in the fixed obligations of industry and a constant necessity to

cut the costs of production. In the end we will all be driven to do the hard way what we already know how to do the easy way.

The answer to the problems of the printing industry workers is the same as the answer for all other Americans. It is not to be found in the standard, stumblebum methods of the Price System, nor in any stopgap injections of artificial prosperity, nor in the manipulations of devious political devices. All Americans want better goods and services and more goods and services. All Americans want abundance, distribution, security, leisure, equal opportunity, and physical democracy. These things that humanity has been dreaming about through all the ages are available right now in North America. We have the men, machines, resources and knowledge to put these things into our social inventory, where all citizens may have access to them. Technology will shortly supply the motivating incentive to do the job.

Once upon a time, a printer was only a printer. He engaged in his trade, took his opportunities where he found them, and, like all other Americans, let collective social problems go hang. Now he is a citizen of a technological civilization. His individual problem has become a part of the collective social problem. He will rise or fall as the great mass of his fellow citizens rise or fall. So, it is not correct to call him only a printer any more. He has become one of the human components of America's Great Technology. With this goes a new concept of citizenship, a concept fit for the higher potentialities of the Power Age civilization to be.

Can the printing industry worker measure up to this higher concept? Only time will reveal the answer. But, there is no escape from the fact that the trend of physical events in North America will force a decision upon him, one way or the other. Mr. Printer, wake up!

Investigate Technocracy.

THE SUN SHINES EAST AND THE SUN SHINES WEST

'We have taken considerable satisfaction in the fact that even with more than 10 million persons in the armed forces we have been able to produce goods and services at a rate of nearly \$200 billion a year. This record achievement resulted in part from an expansion of the labor force, *but much more important has been the rise in output per man-hour.*' Amos E. Taylor, director, Bureau of Foreign & Domestic Commerce, U. S. Dept. of Commerce, in a talk in Chicago, Feb. 16, 1945.

The total monetary value of automotive war production for 1944 was 8 percent greater than that of 1943 while employment in 1944 was 2 percent above 1943.—Pres release of Council for Automotive War Production.

The cotton textile industry is now spinning 40 percent more cotton on 31 percent fewer spindles than it did 11 years ago. (R. J. Cheatham U.S.D.A. i Science Digest, November 1944)

Technology Marches On!

When a Snowball Starts Rolling

By Research Division 8741-1

Steel Production

In 1943 the steel industry employed 626,000 men, who worked 1,397,000,000 man-hours. In 1944 employment decreased by 55,000 to 571,000, and man-hours worked also decreased 13,000,000 hours to 1,384,000,000. But production did not fall. Instead, it rose from 88,837,000 tons in 1943 to 89,576,000 tons in 1944. (*Steel Facts*, February, 1945). Ed. Note: See *Man-Hours and Distribution*, published August, 1936, page 10, third and fourth paragraphs.

Automotive Production

A 500 ton fast traverse press is now in use to rivet fin bulkhead spars for heavy bombers. The press handles two spars at once and places, rivets and tacks 270 rivets in 10 minutes. The press superseded a hand method that required 50 minutes for the same operation. This is an 80 percent reduction in man-hours of labor.

Between the fourth quarter of 1943 and the fourth quarter of 1944 deliveries of war materials to the Armed Forces from the automobile industry rose 11 percent, while employment in the industry dropped 16 percent. (*Automotive War Production*, March, 1945.)

The Ford Willow Run plant producing Liberator bombers reached its peak of employment in June, 1943,

with 43,331 workers on the lines. Peak production, however, came one year later in June, 1944, when 442 bombers were accepted. In the intervening year, while production was rising, employment was declining rapidly. By March, 1945, employment had declined 20,102 from the peak to a total of 23,229. Assembly time on the Liberator wing alone was cut from 5,500 man-hours to 460. (John Jenkins in *Chicago Daily News*, March 21, 1945.) Ed. Note: See *Technocracy Study Course*, published 1934, page 119, paragraphs three and four.

Housing

The United States Steel Corporation has entered the mass production house manufacturing industry. It recently bought control of Gunnison Homes, Inc., located at New Albany, Indiana. There is not a single architect on the staff of Gunnison Homes Inc. Foster Gunnison, president of the company, believes that a designing engineer who spends a year or two studying housing can provide the public with better houses.

Gunnison Homes Inc. has turned out over 2,800 housing units for the government. Production is carried out on the timed flow, conveyor, assembly line system perfected by the automobile industry. 'Raw materials arrive in freight cars at one end of

the plant, and all parts for a complete house, including heating, sink, cabinet units and electrical fixtures, arrive at the other end every 25 minutes.'

Foster Gunnison stated that a six horse power motor recently installed replaced 120 men. An electronic 'trouble shooter' installed in the production manager's office, spots all machinery trouble the instant it happens. Foundations for the houses, basement excavations, wiring, plumbing and an exterior coat of paint, in addition to the two sprayed on at the factory, are supplied by local dealers of the company. Three carpenters and two laborers without any hoisting or special equipment can erect the house. It can be set up in one day and be ready for occupancy in a week. (From stories in the *Chicago Tribune*, November 28, 1944 and January 10, 1945.) Ed. Note: See *Technocracy Study Course*, pages 261, 262 and 263.

Coal Mining

The Velva coal mine (strip mine) at Velva, North Dakota, employs 103 workers and officials and produces 2,000 tons of coal per day. This is an average of 19.5 tons per man per day. (Bureau of Mines release, March 21, 1945.)

Peabody Mine, number eight, at Tovey, Illinois (underground mine), employs 535 men and produces 7,000 tons of coal per day. This is a little better than 11 tons per man per day. (Bureau of Mines release, March 20, 1945.) Ed. Note: See *Technocracy Study Course*, last paragraph, page

114, page 115 and first two paragraphs page 116.

Agriculture

The following quotation is from a bulletin on farm trends published by the College of Agriculture of the University of Wisconsin in March, 1945:

Data for Wisconsin show that in recent years the State has experienced an immense expansion in farm output and during the same time there has been a major decline in farm population. In spite of a substantial reduction in the number of people on farms, the agricultural output has advanced to new high levels. These trends may be expected to continue over a considerable period of time.

The College report listed the following factors as responsible:

1. Favorable weather in recent years.
2. Technological improvements in crops, such as hybrid corn and new types of oats.
3. Mechanization of farm operations. In 1920 Wisconsin had 8,62 tractors. By 1944 the number had increased to 107,634.
4. An eightfold expansion in the use of commercial fertilizer since 1935.
5. War demands for increased output.
6. High prices since the war started.
7. Increased development of agricultural specialization.

In a speech given before the San Antonio, Texas, Manufacturing Association and reported in the *Townsend National Weekly* for January 6, 1945, Sam H. Jones, former Governor of Louisiana had the following to say

Within two years after the war nine-tenths of the former labor in the cane (sugar) fields will be displaced.—In the rice fields of Texas, Louisiana and Arkansas the new combines permit two persons to do the work of 20. The rice fields will be completely mechanized in two years after the war. 'One man with mechanized equipment will be able to plant, cultivate and gather 200 acres of cotton. Compare this with the present pattern which requires one family to handle 12 acres.' When the South completes its farm mechanization—what then?

Ed. Note: See 'Feed America First' in *Technocracy*, A-18, page 15.

Buried Patents, etc., Department

Once upon a time a Chicago firm manufactured a small turbine generator. The turbine generated electric power from falling water and was able to furnish enough juice to supply four average-sized houses. The then vice-president Henry A. Wallace saw one of the turbines in use. He recommended it as being highly practical and economical in operation. President Roosevelt had been seeking such a turbine for use at his Hyde Park estate. When Wallace told him about this one, he im-

mediately wrote a letter to the Chicago firm. In reply, he was informed that the company had been bought out by General Electric. Still pursuing the will-o-the-wisp, F. D. R. wrote to General Electric. He was informed that since the consolidation, the low cost, economically operated generator was no longer being manufactured. (Rewritten from the column 'Inside Washington' in the *Chicago Sun*, January 23, 1945.) Ed. Note: See 'A Paper on Patents' in *Technocracy* A-6.

Social Welfare

Groups of F. B. I. agents in the field are being brought back to national headquarters at Washington, D. C., for special retraining to combat an expected postwar crime wave. J. Edgar Hoover, Director of the Federal Bureau of Investigation, stated recently that "Kidnappings are on the increase. Already we are beginning to receive reports of bank robberies, a number of them have been committed by discharged veterans of World War 2." Hoover listed three factors pertinent to the expected crime wave: (1) Juvenile delinquency; (2) Economic readjustments of war workers; (3) Veterans with criminal tendencies who have been taught to kill. He said:

The great bulk of the service men will return to the normal way of life, provided plans have been made to provide them an opportunity to earn a living. Without that—we will have chaos. Ed. Note: See 'The End of Crime' in *The Technocrat*, October, 1940, page 12.

In the Question Box

By Public Speakers Division 8741-1

Is it not the aim of Technocracy to have Total Conscription a permanent form of operation in America?

H. A. W.

Not at all. The published program of Total Conscription, since the beginning has specified that it is to be for the duration and six months thereafter. Total Conscription is a partial reorganization of our present system of industrial production, and trade and commerce in general, along engineering lines, so as to obtain the maximum efficiency of operation. The purpose in mind is to win the war in the shortest time at the lowest cost, in lives and resources, and also to provide a transitional vehicle into the peacetime postwar period with the minimum social dislocation all around.

Can Total Conscription be introduced without a change of government?

E. R. T.

Yes. In fact, a change of government is not desirable in time of war. Total Conscription can only be installed by the present constitutional government. Anything else would be a fascist imposition, and not Total Conscription.

After the six months of readjustment after the war and Total Conscription is over, what happens, do we just slide back to

the much for the few and nothing for the many?

A. R. S.

That's entirely up to the American people. It is one of the cardinal points of the 'American tradition' that 'all governments derive their just powers from the consent of the governed.' If, after having experienced a period of efficient social operation under Total Conscription, the American people decide to go back to the dog-eat-dog rules of the Price System, it's their privilege. Likewise, it's their own funeral. However, the design of Total Conscription can be used as a bridge toward a higher form of civilization. It is all up to us. Technocracy has not been concealing any aces up its sleeve in regard to the possibilities in Total Conscription. It has been completely frank at all times. The program is, and will be what we make it. What more do we want? Are we upstanding Americans who want to mold our own future and that of our country? Or are we spineless lickspittles, who look up to our 'betters' to do it for us? If we turn out to be the latter it's a guarantee that we'll get a malignant dose of American fascism in the postwar era.

What would be the result of a good educational system?

H. E. M.

If you mean a scientifically correct, educational system, whereunde

very citizen would be guaranteed a complete education, the results would be beyond our present ability to imagine. One of the outstanding characteristics of Price System methods of operation is the widespread promotion of ignorance and the concomitant inoculation of misinformation. Along technical lines America has a considerable body of correctly educated individuals, perhaps several million. But among this group there is almost a total lack of comprehension of the nature of America's social problem. They are simply not interested. Each one is busy grinding his own axe, furthering his own preferential position. Many a so-called layman has a much better understanding of the overall relation of science and technology to social

problems than the technical specialists have. Nevertheless, it is the technically trained personnel of America who understand how best to operate its industrial mechanism, in order to achieve abundance and security. It is not likely that we can solve our social problems by educational action; but we can solve our educational problems by social action. The necessary social action will be provided by the pressure of physical events. After that has occurred, a 'good' educational system can be set up, not before. After all, you can't expect the triple oligarchy of private enterprise, ecclesiasticism and the political state to (themselves) tear away their own best camouflage, which is widespread popular ignorance and misinformation, can you?

RECORDS DON'T SHOW ALL THE TAKE, EITHER

Landlords make more money under rent control than they did in prewar years. This was the point of a talk delivered by Alan Carson, Deputy Administrator of the FPA, in charge of rent control, before the American Institute of Banking at Chicago on April 10, 1945. Carson cited surveys made by checking account books, real estate boards, property management organizations and individual property owners in 16 cities. These records show that net operating incomes of apartment houses are 35 percent higher than in 1939. For smaller structures the increase was 40 percent.

'Operating costs remained practically stable in apartment houses from 1939 to 1944 and even sharply declined in the case of small structures.

'Furthermore, the tight housing market has virtually eliminated vacancy losses which in 1939 amounted to 8 per cent

for small structures and 10 percent for apartments.'

Carson pointed out that the increase was in net operating income before depreciation and interest but pointed out that these factors had even declined during this period. (As reported in the *Chicago Sun*, April 10, 1945.)

'Every now and then they find a bum dead in a flophouse, with \$5,000 or \$6,000 sewed in his greasy underwear. The story is usually good for three or four paragraphs in the newspapers.

'The American people, collectively, are not unlike such a bum. We live in filthy, substandard holes. . . . Compared with our material resources, the fabled riches of the East would look like the merchandise in a hock shop—yet we are ill-housed.' (Excerpt from an editorial in the *Chicago Daily News*, January 3, 1945.)

Each in His Own Tongue

VOICE OF THE PRICE SYSTEM

Did They Say That?

By Publications Division 8741-1

My whole working philosophy is summed up in a simple rule. If you buy something for a dollar and sell it for a dollar and a quarter, *you can't lose.*

Ex-Secretary of Commerce Jesse Jones (as quoted in *P. M.*, January 23, 1945).

Manufacturers who introduce labor-saving machines are sometimes accused of reducing employment. They should admit the charge, without any apologies. Instead, they frequently make the foolish defense that labor-saving devices create jobs and increase employment. . . . One of the most absurd of the current fallacies is the idea that everyone has the right to a job. . . . Can the government help us? Yes. It can help by leaving us alone.

Extracts from an article by John W. Scoville, economist for the Chrysler Corporation, in *Barron's Weekly*, January 29, 1945.

If law violators and delinquents present in his community are numerous, the citizen of that locality should be alarmed. . . . The citizen can do something about it. The power of the ward committeeman is tremendous. He names judges. HE GIVES

ORDERS TO THE POLICE. He causes the transfer of police captains who do his bidding.

V. W. Peterson, operating director of the Chicago Crime Commission, in his report to its 26th Annual Meeting (as quoted in an editorial in the *Chicago Times*, February 17, 1945)

When I get up to give a speech I have no idea what I am going to say and when I sit down I have no idea what I have said.

U. S. Congressman Sol Bloom (Dem. N. Y.), Chairman of the House Foreign Affairs Committee. (As quoted in *Newsweek*, March 12, 1945.)

The final objective of *industrial research* is the insurance of the continued existence of a business and the maintenance of its profits in a competitive and changing world.

Roland P. Soule, business expert, the *Arthur D. Little Industrial Bulletin*, October, 1941.

The time has come when the full strength of your association and the strength of your local connections—the suppliers, bankers, and the citizen groups—must be mustered. This combined effort must be directed toward convincing the congress, the press, and the public that once and for all the encroachment of government

in the housing field must be stopped. . . . There is no corner in the American picture where the federal government either directly or by subsidy to local housing authorities may properly enter the housing field by building, owning, or operating public housing projects.

Joseph E. Merrion, President of the National Association of Home Builders (as quoted in a story by Al Chase in the *Chicago Tribune*, March 3, 1945).

We don't need to look at the building industry. It is all right. We don't need to worry about our financing system for homes. It is good. What we do need to look at and worry about are the endless interferences of the bureaucrats, government, and some labor leaders who are misled into foolish actions by their temporary political influence.

Let's reverse the picture. Let's make it profitable to build, then maybe we'll get somewhere. If this doesn't happen, we will not and cannot have a post-war housing boom.

Herbert U. Nelson, executive president of the National Association of Real Estate Boards. (As quoted in a story by Al Chase in the *Chicago Tribune*, January 24, 1945.)

Any dissemination of such information is contrary to the fixed policy of the Chicago Mercantile Exchange. . . . There are grapevines that we don't know about sometimes.

Maurice Mandeville, President of the Chicago Mercantile Exchange, answering an assertion by Representative Taber (Rep. N. Y.) that advance information regarding government sales of eggs had been obtained by Chicago grain and egg speculators, which had netted them millions. (*Chicago Tribune*, March 11, 1945.)

Manufacturers must have a reasonable profit in order to do their duty.

Judge Elbert H. Gary of the U. S. Steel Corporation, in testimony before the Special Senate Committee, investigating the Munitions Industry in 1917.

You must realize that while you've been overseas, the girls at home have been getting experience which makes them much more qualified for the salary you ask.

An executive, in an employment agency, to a Red Cross girl who was seeking employment after returning from 18 months' service overseas. The incident is related in a letter signed 'M. J., New York, N. Y.,' which appeared in the column 'Back Talk' in the *Chicago Daily News Newsweek*, March 10, 1945.

It is absolutely unlawful to demand, to defend, or to grant unconditional freedom of thought, of speech, of writing, of worship. Pope Leo XIII in his Encyclical *Libertas*.

VOICE OF TECHNOLOGY

They Did Say That!

By Publications Division 8741-1

There is a great voice in the

world today, the voice of science and technology. It is a voice heard since ancient times but never until today has it spoken with such authority, have its words been so filled with promise, has it been listened to with such hope. And in no country in the world does the voice speak so eloquently as in our own.

Science and technology have changed and are changing the lives of all men. Not a single aspect of our society but feels their advance. The things we make and use, the food we eat, the clothes we wear, the way we travel and communicate, the houses we build, the way we cure and prevent disease, the way we fight—and the way we shall win—have all been fashioned by science. . . .

The highest goal of science is the welfare of human beings.

Robert P. Patterson, Under-Secretary of War (as quoted in *Chemical and Engineering News*, October 25, 1944).

I am convinced that if all the living force which is hidden in a cubic foot of coal could be employed in an efficient manner to move a machine, we could accomplish by it then the daily labor of 8 or 10 men.

John Bernouilli (1667-1784), distinguished mathematician and teacher, in 1735.

Architecture is said to be a true mirror of the life and social behavior of a period. Too bad for us! Today's street scene is a

symbol of disunity in the figurative meaning of a disrupted and decayed community life.

Walter Gropius, Chairman, Harvard University Department of Architecture, in an article on housing in the *Chicago Sun*, March 2, 1945.

You know in the Senate we still keep the old snuffbox right up there where it's been for more than 80 years, with a fresh supply of snuff, though nobody ever dips into it. And there's a little silver box on each desk. What do you think is in that? Burnt sand that we're supposed to use when we sign our names in ink. Well, our legislative system is about as anachronistic.

U. S. Senator Charles O. Andrews, Florida. (As quoted in *Time*, December 4, 1944.)

There is a record in his (George Washington's) diary which shows that he was thrilled by Rumsey's invention of a boat which he saw moved against the current by the action of that current. *It gave him a new hope for the development of his favorite project, the waterways.*

Michael Pupin, scientist, in his book *Romance of the Machine*, 1930.

If all farming were done in 5000 acre plots with 10 or 20 bottom gang plows, it would not take many men to raise our food.

C. C. Furnas, Director of Research Curtiss-Wright Corporation, in his book *The Storehouse of Civilization*, 1939.

Since 1929, our technological

improvements have been so great that today there can be no doubt of our technical ability to provide all our people with a relative abundance of economic goods and services. We are indeed *physically* equipped as a people to move our material civilization far forward. The question is, are we *psychologically* prepared to accept that opportunity? Are we aware, deeply aware, that it is no longer necessary to have large numbers of people living in poverty because of inadequate technical productivity?

Edward G. Olsen, Director, School of Education, Russell Sage College, Troy, N. Y. (In a speech delivered before the Tenth Annual Purdue University Guidance Conference, Lafayette, Indiana, November 10, 1944.)

Lastly, I would address one general admonition to all: that they consider what are the true ends of knowledge, and that they seek it not either for pleasure of the mind, or for contention, or for superiority to others, or for profit, or fame, or power, or for any of these inferior things; but for the benefit and use of life.

Francis Bacon, 1561-1626 A. D.

FORTY ACRES AND A JEEP

A soil-mixture machine, invented by West Virginia's agriculture commissioner, B. McLaughlin, is reported to do the work of five common farm machines. Its aimed advantages include:

Preparing seed bed 'twice as good as can be made with existing equipment';

Operating at rate of four acres per day with machine, using the lightest-weight tractor made; at a total cost of \$2.50 per acre;

Replaces the plow, the disc harrow, the spike-tooth harrow, cultipacker, and fertilizer-spreader;

Does work of the five other machines in one operation but in one-fifth the time; Brings ground-moisture to within 1½ inches of surface, optimum for seed germination, but does not lose this vital moisture and dry out topsoil as ordinary plow does, its inventor, an experienced farm manager points out.

So you are going back to the farm after the war? Think again. In a U. S. Department of Agriculture release of September 19, 1944, Secretary of Agriculture Wickard warned sharply 'against any be-

lief that there can be any sizeable back to the land movement after this war. There is every reason to believe that a somewhat smaller, rather than larger, farm labor force will be needed to turn out full production.'

The number of telephones in the U. S. increased from 14,000,000 in 1920 to 23,000,000 in 1940. However, this increase was confined to urban centers, for the number of farms having telephones decreased 39 percent during the same period.—From the report of the Federal Communications Commission on rural telephones, as reported in Bascom N. Timmon's column in the *Chicago Sun*, December 17, 1944.

POLITICS—An agreement among certain men, wholly dogmatic, that ignorance of fact is the best policy.

CLEVER, EH WHAT?

The official headquarters of the Southern Pacific Company, a \$1,800,000,000 railroad corporation, is in a three room white clapboard cottage in the little village (population 34) of Spring Station, Woodford County, Kentucky. The town is about 1,000 miles away from the Southern Pacific's nearest trackage. Annual stockholder's meetings are held in the three room cottage. The road was incorporated in Kentucky to take advantage of low taxes. Among the lowest taxes in Kentucky are those in Woodford County. An enterprising reporter from the *Louisville Courier-Journal* is credited with making the discovery. (As reported in the *Chicago Daily News*, January 30, 1945.

'A prominent business man suggests that the profit incentive 'must be restored,' and that responsibility for this rests with the government. With corporate profits estimated the largest in history, and leading industrial firms last year earning an average net return on total invested capital after enormous reserves for contingencies, postwar, inventory, and what not, of 9.9 percent, it seems fair to ask what this businessman really has in mind in demanding that the profit incentive be restored?'

—Robert P. Vanderpoel, financial editor of the *Chicago Herald-American*, in his daily column of April 20, 1944.

'I opposed the mobilizing of labor unless there was a mobilization of capital, of resources, all man power, money, housing — everything including a work-or-fight clause. I insisted that when they drafted men and women, there should be living wages, decent housing, hygiene, food, transportation, education and care of workers' children. I have favored over the years, as part of our war making machinery, a more rigid, immediate, complete and competent control than any one else has favored on man power, money, taxes, materials, manufacturing, prices and rationing.'—Bernard M. Baruch, as quoted in the *United States News*, January 5, 1944.

Some Technocracy Section addresses in Great Lakes area

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8040-2—Box 356, Ambridge, Pa.
8040-3—340 Brighton Ave., Rochester, Pa.
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8141-2—314 Superior Ave., Cleveland 14, Ohio.
8141-3—38 South High St., Akron, Ohio.
8141-4—2237 Front St., Cuyahoga Falls, Ohio.
8141-7—501½ Tuscarawas St., Barberton, Ohio.
8141-14—P. O. Box 553, Kent, Ohio.
8141-15—12516 Shaw Ave., Cleveland, Ohio.
8240-1—207 N. Washington St., Galion, Ohio.
R. D. 8242—c/o Arthur C. Clayton, Marine City, R. No. 1, Mich.
R. D. 8242—c/o John Reynolds, St. Clair R. No. 2, Mich.
8341-1—1430 Adams St., Toledo 2, Ohio.
8342-1—9108 Woodward Ave., Detroit, Mich.
8342-2—708 Garland St., Flint 4, Mich.
8342-2—615 Peoples State Bldg., Pontiac, Mich.
8439-1—P. O. Box 81, Station A, Dayton, Ohio.
R. D. 8641—916 E. Corby Blvd., South Bend, Ind.
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R. D. 9737—4442 Bayley, Wichita 9, Kan.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Mond, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

Great Lakes Technocrat,
143 Belmont Ave.,
Chicago 14, Illinois

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It's A Good Trick If You Can Do It



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Victory, without the use for abundance of the powers we have developed for war, would be, indeed, a hollow victory.

Excerpt from a letter by Franklin Delano Roosevelt, written five days before his death, to O. Max Gardner, Chairman of the Advisory board of the Office of War Mobilization and Reconversion. (As reported in the Chicago Times, April 12, 1945)

GREAT LAKES TECHNOCRAT

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Volume III

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Peace and Abundance or Chaos and Scarcity

North America approaches the postwar period. Every citizen is anxious about the near future. Business men, economists, politicians and star gazers are prophesying daily. These medicine men of the status quo run the scale from calamity to prosperity forever. Each group is blowing its own horn. Confusion compounds upon confusion. The public is in a daze trying to make sense out of this mass of misinformation.

This article is nobody's postwar ballyhoo. It is the little known story of the real forces behind civilization. These powers determined how our forefathers lived in the past. They govern our lives today. They are dictating what must be done in the postwar era, if most of us are to live at all. If you want to know what makes the real noise behind all the phony horn blowing going on, here is the answer. Don't miss this article.

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TECHNOCRACY DIGEST

625 W. Pender Street

Vancouver, B. C., Canada

Which Way North America?

Peace and Abundance or Chaos and Scarcity?

By The Peripatetic Technocrat

In the past all civilizations followed the same path of social progression. This was a handicraft agrarian way with ever present natural scarcity. From this base evolved a related, controlling superstructure of business, politics and ecclesiasticism. Despite all the trumpeting of history, human society was static for thousands of years. Then came the industrial revolution.

With this fundamental alteration in the base of society, a totally new path of social progression appeared. This is the technological path. It is opposite and opposed to the old path. For the last 169 years North America has been following both paths of social progression simultaneously. In addition it has developed further along the technological path than any other continental area.

Let's trace both paths of social progression. First, let's look into the genesis and nature of each path. Then we'll examine the record of what they are doing today. Finally, we'll project them into the future by stating their own proposals for the postwar era. In this way we can find an answer to our question: 'Which Way America?'

THE OLD PATH OF SOCIAL PROGRESSION

The First Sap Was Homo

ANTHROPOLOGISTS and historians tell us that mankind lived in trees and caves for a long time. If this is correct, they had plenty of opportunity to observe the behavior of the other wild life around them. They must have noted that it was a system wherein the strong preyed on the weak. It was a case of eat or be eaten, kill or be killed.

Early man did not survive in this environment by obeying these rules. He was always too puny to compete with the carnivora on a physical basis.

But he did survive by a combination of hiding from, running away from, and outwitting his natural enemies.

After awhile the pressure of his environment forced a defensive idea into his primitive 'mind.' He came together in social groups. The purpose behind this was to multiply his individual strength against the opposing forces of his environment by adding to it the strength of many others of his own kind. Thus it was possible to obtain for himself greater individual security. This social movement of early man was the first demonstration of collective intelligence ever recorded.

Shortly after that some forgotten louse discovered the principle of the relation between value and scarcity. That was the beginning of the Price System. Soon the 'smarter' individuals learned how to apply this principle so as to gain a preferential advantage over other individuals in the social group. From there it was just a step to the invention of money, interest, debt, profit, delayed exchanges and the whole caboodle of characteristics that have marked the Price System down through the ages.

Social Sabotage Began With Price

The foundation of the Price System is rooted in scarcity, value and money. From this springs its three cardinal rules: Buy low, sell high, always keep things scarce. We might define a Price System as follows:

Any social system whatsoever that combines the relation between value and scarcity with the use of money into a system of trade and commerce for the purpose of buying and selling for a profit is a Price System.

As time went on the Price System developed, became more refined and spread all over the world. It is the only system of trade and commerce ever known. The more refined and developed it becomes, however, the more it remains the same. The same old three cardinal rules are still valid: Buy low, sell high and for God's sake, keep things scarce. That's the secret behind 'want in the midst of plenty.' That's the motive behind the anti-social phenomena of buried patents, high prices, restricted production,

monopoly controls and international cartels. They exist in obedience to the cardinal rules of the Price System.

A point to note becomes evident now. The rise of the Price System is

primitive social life perverted to its original purpose man had in mind when he first came together in social groups. It set man against man individually and as groups. It prostituted his collective intelligence and security to individual chicanery. Man reverted to the law of the jungle. He actually translated the system of the strong preying on the weak, eat or be eaten, kill or be killed, into human law and institutions.

Every Price System is organized to exchange goods and services for profit. Any distribution that may result therefrom is purely accidental and incidental to the main purpose at hand. It must never be permitted to become too great lest it endanger scarcity. The primary function of business is to exploit the natural resources of any area and its people for all the profit the traffic can bear. From this nature of the Price System springs the entire collection of ethical morals and behavior patterns that constitute modern civilization.

This is not a moral indictment of the Price System but a factual analysis. The Price System is the only type of social system that could have operated under the conditions of natural scarcity that existed in the past. It is futile to guess what form primitive social life might have taken if the Price System hadn't developed out of it. The point is that the con

cept of price, which subverted the original purposes of social life, rested upon a physical factor of early man's environment. That was natural scarcity. This is what validated the Price System then and what validates it now wherever a natural scarcity exists. In North America, natural scarcity went out of the picture about a generation ago. The Price System has been an invalid imposition here ever since then.

Aladdin Had No Lamp Then

In the past man's ability to produce goods and services was always geared down to the power output of the human body, plus the number of workers available. He had no machines or technology to speak of. Consequently, he never could produce enough to give every one a sufficiency. There was always an ever present natural scarcity.

Since scarcity has value, it can be bought, sold, exchanged and manipulated. A social system with its rules reflecting these characteristics was

bound to arise out of such conditions. An equitable division of the existing scarcity would never have provided a sufficiency for all at any time in the past. This is what validated the Price System.

Since it is a mercantile form of civilization, mercantile ethics prevail. The highest rewards are given to those who can outbuy, outsell, out-exchange and out-manipulate their competitors. This puts a premium upon the exercise of the lowest instincts of the human being. These might be listed as the mercenary instinct and the instinct to lie, cheat, chisel, steal and worse. In fact, it is plain that the operating rules of the Price System are the lowest common denominator of the abilities, intelligence and necessities of mankind.

This is a brief record of the genesis and nature of the old path of social progression. All North Americans still lead their precarious existences under the tyrannical restrictions and regimentations of this old path today.

THE NEW PATH OF SOCIAL PROGRESSION

'Like Water, Willy Nilly Flowing'

Setting an arbitrary date as the beginning of the industrial revolution is like setting a date when a youth leaves his boyhood behind and enters into manhood. It is a process of growth. For thousands of years under the old path of social progression there was a slow growth of scientific

knowledge. Who first conquered fire?

Who first learned how to smelt iron ore? Who discovered the principles of the lever, the inclined plane, the wedge, the pulley and the wheel? It's not important to know this. What is important is the fact that scientific knowledge is the common property of all mankind.

For the first 200 years of white settlement in North America, the old path of social progression held exclusive sway. Then in 1776 James Watt invented the first single acting steam engine. With this high point in history the new technological path opened up. Since then North America has been following both paths but with increasing incompatibility all the time. We have progressed so far along this new path that now America is in a physical environment totally different from that of our founding fathers. Let's examine the evidence.

In 1790 about 90 percent of the people lived on farms. It required the surplus products of 19 farmers to feed one city person. In 1945 less than 20 percent of the population (U. S.) live on farms. The surplus products of 19 farmers will feed 56 city persons, and there will be enough left over for 10 more in export trade.

In 1944 more than twice as much freight (ton-miles) was hauled as in 1919, with 600,000 less railroad workers employed.

In 1944 more than 40,000,000 more tons of coal were mined than in 1918, with 200,000 less coal miners employed.

In 1939 about 10,000 less steel workers than were on the job in 1919 produced over 15,000,000 more tons of steel.

1849—72% human

“ —21½% mechanical

“ —6½% work animals

In 1920 U.S. produced 20,000,000,000 kilowatt-hours of electricity; in 1940 production was 144,000,000,000; in 1944 it reached 244,000,000,000. The curve of power production zoomed upward for 24 years. Not so with the curve of employment in power production. The all-time peak was reached in 1930 with 298,000 workers employed. By 1943 this had declined to 240,000.

What do these examples add up to? Simply that there is a dual force propelling North America along the new path of technological social progression. This dual force is energy and technology. By energy we mean that type of energy derived from source outside the human body, such as obtained from coal, oil, gas, wind and falling water. This is known as extraneous energy. Technology is the application of physical laws to industrial production by means of inventions, processes and new mechanisms.

The extent to which extraneous energy has displaced human energy in the last 169 years is clearly illustrated by the studies of Dr. C. R. Daugherty and Water Supply Paper No. 57, U. S. Geological Survey. This consists of an analysis of the power use in factories (U.S.) between 1849 and 1929:

1929— 4.8% human

“ —94.% mechanical

“ — 1.2% work animals

It will be seen that human energy as a source of motive power was almost completely eliminated in this 80 year period.

The best illustration of the extent to which technology has grown resides in the records of the Patent Office. In the decade between 1790-1800, only 268 patents were issued; between 1830-1840, 5641 patents were issued; but between 1930-1940 a grand total of 485,285 patents were granted. There are many other examples of this trend. Yes, energy and technology are propelling America along the new path of social progression willy nilly.

Do As the Jones' Do

The first lesson we observe along America's new pathway is that the way to produce more is to apply more energy and technology and less toil. America's productive ability is not geared down today, as was the case in the past, by the power output of the human body plus the number of workers available. The only thing gearing it down now is the controlling superstructure of business, politics and ecclesiasticism. This triple oligarchy is obstructing the highway along which America's greater destiny lies.

During the period of our development along this new path of social progression, the aforementioned controlling superstructure remained unchanged. Despite the fact that North America has moved into a new physical environment, it is still subject to the ancient operating rules of the old

path of social progression.

As a people, we have followed both paths at the same time with growing incompatibility and frequent separations, each one more serious than the one before. These took the form of panics and depressions. In 1929 there was a violent parting of the ways. For a while, it looked as if North America would desert the old path for good. But the beneficence of Government brought them both together again. This was accomplished by bribing various minority pressure groups, by destroying the surplus, and by sundry park building and leaf raking projects and the like, not to mention outright charity.

But not a single social problem was solved. Everything was postponed. We muddled along from bad to worse. Then came the second world war, just in the nick of time. Since then a sizeable proportion of the population on the home front has been swimming up to its ears in prosperity. Still nothing has been solved. The danger of foreign aggression has been removed. But the causes which brought about the frequent conflicts between the two paths of social progression in North America have only been intensified.

Besides setting up intolerable tensions between our industrial and social structure, these dual social paths have done something else to us as a people. They have set up a dual set of behavior patterns in all North American citizens. We are a people cursed with a clashing heredity.

For 8 hours a day the working per-

son is a citizen of a technological civilization, functioning according to the requirements of his job. For the other 16 hours, he is an opinionated ignoramus, spouting ideas that died of old age 200 years ago. The average man is constantly trying to interpret the future in terms of the past alone. It can't be done! The future can only be interpreted in terms of the past and present combined.

'I Hear You Calling Me'

The voice of the Price System is always with us. We can't escape it this side of the grave. It has 7,000 years of accumulated propaganda on tap at all times. This tripe is calculated to condition us into acquiescence towards the status quo.

The Voice of Technology has been mute up-to-date. But now it is beginning to be heard in the land. It speaks with greater and greater effect. It says that North America must abandon the old path of social progression or perish. It says that America's destiny lies on the new technological path. Why?

North America has about two-thirds of the world's installed horsepower of machinery. It has two-thirds of the world's graduate engineers. It has the lion's share of the world's known natural resources. It has by far the largest body of technicians and skilled personnel. It has by far the greatest

industrial plant and equipment. It has what the slick paper trade and technical publications love to call the greatest industrial 'know-how.' It has almost one-fifth of the world's land area. But it is burdened with less than 10 percent of the world's population.

No matter how many times or in what way you try to figure this up it always comes out the same. It always adds up to the stubborn fact that North America's economy is an engineering civilization. It requires engineering methods to operate it properly. Price System methods can't do it. They can only muddle around with it and make our collective social problems worse.

North America has moved into the third stage of the industrial revolution, the Power Age. The rest of the world is still in the first or second stage. We have reached a condition of potential abundance. But we are still trying to operate with methods of scarcity. We are trying to buy and sell abundance. It can't be done. Abundance has no exchange value. We are trying to operate an engineering civilization with anti-engineering methods. It's no wonder we have so many social confusions, social problems and growing individual maladjustment and psychological complexes. The only wonder is that it isn't worse.

TECHNOCRACY STUDIES BOTH PATHS

Under the Microscope

Now that we have outlined the rise

of both paths of social progression and described their essential charac

teristics and brought them up-to-date, let's examine the record of what they are doing today. But, first, a few words about Technocracy.

Technocracy is not a foreign ism or ology. It is not a struggle of one class against another. It is not a sect of any kind, nor a political party, nor a pressure group. It is an engineering analysis and synthesis for an engineering civilization. It is not necessary, however, to be an engineer to understand Technocracy. Being an engineering study of social problems, it is, in effect, the social aspect of all science. By social aspect is meant merely the manner in which energy, technology and science in general affect our individual lives, and the manner in which their development has created new social problems unknown before.

The Body of Thought of Technocracy, as a whole, is as big as all science, since science affects modern society at every point. Since Technocracy interprets this impact in terms of the general welfare of all, one might call Technocracy the science of society. It is a new body of thought. Consequently, it is not readily accepted by the status quo, which is under the domination of the old path of social progression. Any sane North American, however, with average intelligence can readily understand the main ideas of Technocracy.

The abstruse, technical details, of course, can be understood only by persons with technical training. That is true in all fields of modern science.

However, there are enough technicians and engineers in Technocracy who understand it thoroughly so that the non-technically trained need not worry about being hoodwinked. As a general rule, any scientifically trained person loves nothing better than to discover flaws and expose errors in any project pretending to be scientific. The main point for all North Americans is that Technocracy is a fresh, new approach to social problems; and that it, and it alone, has the correct solution to those problems.

Who Are the Fascists?

America has been at war with foreign aggression for over three years. We are supposed to be fighting fascism. Well, Technocracy has been fighting against fascism ever since the date of its incorporation over eleven years ago. In A-2 *Technocracy* magazine published in July, 1935, William Knight traced the rise of European fascism and exposed the basic forces behind it. In October, 1935, in A-5 of the same magazine, Howard Scott protested against the shipment of scrap iron to Japan. He pointed out that we had 'given them something to remember us by.' He wrote that 'someday this material will come back to us done up in Japanese wrappers.'

It has been coming back at us for over three years now. Some of it in the bodies of dead and wounded American soldiers. A spectroscopic analysis was made recently of scrap iron from Japanese munitions. The analysis was made by the Battelle

Memorial Institute of Columbus, Ohio, which Institute is the largest independent industrial research laboratory in America. The scrap iron, some of it taken from the bodies of our own boys, was pronounced to be American scrap iron. Between 1933 and 1940 American private (free) enterprise sold 10,000,000 tons of scrap to the Japs. This was smart business, but stinking patriotism.

In 1938 in A-16 Technocracy pointed out that 'technology was moving onto the field of military warfare with giant strides.' This was a year before the war broke out in Europe. Technocracy called for a two-ocean navy, a two-ocean air force, a larger army and the introduction of technological methods into the Armed Forces.

All during 1940-1941, when the U. S. was lousy with pro-fascist and isolationist groups all seeking to sabotage America's defense, Technocracy did everything it could to assist our preparations for war. Sections of Technocracy from coast to coast donated the use of their Section Headquarters for Red Cross classes, OCD classes and even for draft board induction centers.

The Mobile Sound Cars of Technocracy were donated for outdoor training classes and programs. Technocracy's Grey Fleet of passenger cars (which, like the Mobile Sound Units are individually owned and paid for by members) was and still is used in paper drives, bond drives and community efforts of all kinds calculated to enhance the war effort.

There's Only One Best Way

In July, 1940, 18 months before the Japanese bombed Pearl Harbor Technocracy published the first draft of its program of Total Conscription. There were two objects in view. The first was to unify the entire American economy on the home front, as well as on the battle fronts, for the single function of waging war at the lowest possible cost in lives and resources.

The program would enroll all citizens in National Service and eliminate pro-fascism on the home front. This would be accomplished by setting up two parallel forces: An Armed Force and a Civilian Home Front Force. All citizens, all wealth, all facilities would then be conscripted into National Service. On for all and all for one! These two citizen forces would be on the same and equal basis of pay, health, food, housing, security and duty toward the common motherland.

The secondary purpose of Total Conscription is to provide a transition vehicle into the postwar period with the minimum social confusion all around. The war in Europe is over. It has been won at the high cost of Price System policies of operation. Behind the stumble bum methods of these policies was always the Great Technology of America, more than making up for their inefficiency. Applying that technology on the battlefield were the technically adept American boys.

How could we possibly have lost

with a combination like that? But, there is still the Asiatic war to win. And after that, there is the peace to win. And after that comes the post-war period. *Fortune Magazine* in December, 1943, said:

For such is the paradoxical character of our economy that when the Germans and Japanese cease to try to kill us, it will be harder for most of us to keep alive than it is at present.

That is stating the case concisely and clearly. Technocracy's program of Total Conscription, or its equivalent, becomes more necessary every month. The closer we draw to the postwar period, the closer America approaches to social chaos. Nowhere on this great Continent, from the Arctic Zone to the Panama Canal, is there any proposal that even faintly resembles an overall design of social operations, except Total Conscription.

TECHNOLOGICAL PATH TODAY

Milo and the Bull

Now we can resume our inquiry along the two paths of social progression. Let's first see what the new technological path is doing today. In the last four years the U. S. has expanded its technology more than in the previous forty. Canada's manufacturing facilities have expanded more in the last 5 years than in the previous 25 years. The U. S. Government now owns over 1,000 new industrial plants, equipped with the best machinery and tools available. These have been estimated to comprise at least 25 percent of our entire industrial capacity to produce.

These plants and facilities cost the U. S. Government \$53,000,000,000. U. S. also has over \$100,000,000,000 in surplus goods of all kinds. The Canadian government has invested almost \$1,000,000,000 in new plants and owns about \$4,000,000,000 of surplus goods. Where did the respec-

tive governments get the money with which to buy these facilities? Answer, they sold bonds to the people and taxed them heavily. Since the money came from the people and the people own their governments, the plants belong to the people.

The great advances America has made along the new technological path of social progression is evidenced by one tremendous fact. The biggest war in all history has always been too small for the great capacity of technology today. The peak of industrial production was reached in U. S. and Canada in November, 1943.

In September, 1943, the U. S. railroad system was operating at only 63 percent of its freight haulage capacity, and at only 48 percent of its passenger haulage capacity. Electric power production was only 46 percent of capacity for the whole year of 1943 and bituminous coal production 72 percent. To cap the evidence

250 of the largest war contractors, holding over two-thirds of all the prime war contracts, themselves testified in a survey that only 16 percent of them were operating at full capacity in September, 1943. This was defined as two shifts per day.

The load factor in industrial production is the difference between full capacity, potential and actual output. Full capacity is defined as full operation of all facilities 24 hours a day, 365 days in the year. Actual output, subtracted from full potential, is the load factor of operations. It probably never rose much over 30 percent in American industry as a whole even at the peak of production.

It might be argued that a higher load factor was limited by the shortage of manpower. The answer is that production is not geared down to the number of workers available but to the extent to which technology and automatic operations are applied. This is the Power Age, not the handicraft-agrarian age!

'Don't Fence ME In'

North America has demonstrated its capacity to flood the entire world with material for war on part-time industrial operations. If it can do it for war, it can do it for peacetime civilian consumption. Let them find an answer to that! The Voice of the Price System says that these new government owned plants can't be used for civilian production. That is the propaganda of scarcity. You can read it in practically every Price System publication.

The Voice of Technology says that these new plants and facilities can be used for civilian production. Let's listen to three outstanding examples of the Voice of Technology. Mr. A. B. Einig, President of the American Machine Tool Distributor's Association, said at a meeting of the Association's Executive Committee in Chicago on April 18, 1945, that 'nearly 95 percent of the one million machine tools made since Pearl Harbor can be used in civilian production.' He ought to know what he's talking about. Machine tools are his business.

Some time back, before his nomination for the vice-presidency, Harry S. Truman, as Chairman of the Senate War Investigation Committee, stated in a report:

We have the factories, the tools and labor supply. During the war we have vastly increased our facilities to produce raw materials. New processes for fabricating them have been developed. Any assumption that these plants cannot be used is as baseless as the contention made in 1941 that our automobile plants could not be used to produce war materials.

Last, we present the view of our late, great President Franklin Delano Roosevelt. He wrote a letter to O. Max Gardner, Chairman of the Advisory Board of the Office of War Mobilization and Reconversion, just five days before he died. In that letter was the following statement: 'Victory, without the use for abund-

ance of the powers we have developed in production for war, would be, indeed, a hollow victory.'

This is a brief picture of what the new technological path of social progression is doing today. It has built the most gigantic and efficient physical plant for producing goods and services ever seen under this sun.

It is winning a global, technological war on part-time operations. It has brought into being the means to produce and distribute abundance, leisure, security and equal opportunity to all citizens. Now, let's see what the old Price System path of social progression has been doing these last few years.

THE OLD PRICE SYSTEM PATH TODAY

Into the Mouth of Hell

One would think that after 169 years of extra special freedom for 'free enterprise' that it would be able to show substantial social benefactions accruing therefrom. Let's examine the record. First, what has 'free enterprise' done with America's natural resources?

Today, five-sixths of America's original forests (U. S.) are gone. They have been cut down and not replanted. The annual cut and waste of timber resources has been exceeding the annual growth for 40 years. In 1943 the excess was 50 percent.

Twenty percent of our original cropland has been ruined for any further cultivation. Another 30 percent is badly damaged. Every year the nation is ravaged by floods. If it isn't one river, it's another. And what do we do about it? Nothing! Nothing at all. Oh, yes! Pardon us, we do do something about it. We build dykes along the rivers to confine the raging waters so as to hurry them down toward the oceans, carry-

ing in their muddy bosoms America's Number One natural resource, the land. Every year a billion tons of soil is washed into the oceans. One-third of America's top soil has been lost in the last few hundred years. That's how the Price System solves social problems.

Our most productive mining districts are nearing exhaustion. High grade iron, copper and zinc ore are getting low. We are now stockpiling all three of these metals from Central America. Over 11,000 tons of steel were wasted in the manufacture of inferior razor blades alone in 1944. The same amount of steel, with a slight change in the metallurgical content, would make enough lifetime blades to satisfy the demand of most of the adult male population for many years. But, anything goes if there's a profit in it. Ten thousand banzais for good, old 'free enterprise.'

Every one knows that fire is man's best friend (next to his dog) and his worst enemy. But few people

know the extent of property damage wrought by fires every year in the good old U. S. A. In 1944 it ran \$800 per minute, night and day, week after week, from one year's end to the other. In Chicago alone there was a fire every 15 minutes in the first 90 days of 1945. Considering the Jerry-built homes that most Americans have been sold into by private enterprise, it is a wonder the whole nation doesn't burn down. Again, we can thank technology, plus the brave fire laddies who stand on guard night and day. But there's still hope. We may get a hot, dry, windy season. Remember the Chicago Fire?

'Unto One of the Least of These'

What has the old Price System path of social progression accomplished in regard to America's human resources in the last 169 years? Again, let's examine the evidence.

Today, such a thing as a public health system is non-existent in North America. We have always had a situation wherein the various schools of the healing art compete fiercely for the business of the sick, the while they denounce each other at every opportunity. One of the results of this freedom to chisel profits out of the sick is that about 80 percent of the American people are wholly without systematic health care. The draft records revealed that 40 percent of our young men were physically unfit for military duty.

Our educational system is so inadequate that a recent survey showed that out of every 40 adults only 14

got through grade school; 6 managed to squeeze through high school; and only 2 had the dubious privilege of going through college. There are from 3 to 10 million illiterates in the U. S., ranging from those who can neither read nor write to others who cannot understand a written order. In 1944 we permitted one million fewer boys and girls to enter high school than in 1940. The President of Grinnell College claims that 50 percent of Americans are occupational misfits and that most men at the age of 40 are still looking for a job with a future in it. Some school system!

Only Saps Work

Our crime record is the world's best. In 1944 we committed a major crime every two minutes, all year long. Figure the total yourself, or send for a copy of the Uniform Crime Report for 1944. Over 95 percent of all crimes listed were crimes against property. The Treasury Department is asking for 10,000 additional agents to help catch tax dodgers. It complains that tax dodging is running around \$4,000,000,000 every year. Currency in circulation five years ago was only \$7,600,000,000. At the end of May, 1945, it was \$26,500,000,000. About \$8,000,000,000 of this is in big bills. These are handy for cash deals that are difficult to trace. Ergo, black markets in meat, food, gasoline or what have you, are swamping the entire economy. It sure is handy the way one muddle fits in with another. In fact

it's so convenient for the chiselers that the chaos seems to be organized.

When Do We Stop Eating?

Then there is the little matter of the food shortage. It certainly is getting harder and harder to get a decent meal. One can read statistics about it in every paper. What do the men think who are in the business of buying and selling food, the food brokers? The National Food Broker's Association held a conference at the Stevens Hotel in Chicago on April 7, 1945. The President of the Association issued a statement to the press to the effect that it was common knowledge in the food brokerage business that every food warehouse in the U. S. was jammed with food, much of it spoiling, and that many storage facilities were being used for food that had not been used for that purpose before the war.

The WFA issued a census of livestock on American farms at the end of 1944. It adds up to 1½ sheep, 2 pigs, 2 head of cattle, 1 turkey, over 20 chickens and Lord knows how many dozens of eggs for every family in the U. S. This food, however, is not getting to the people. Unless you happen to be one of the lucky 2,000,000 citizens who owns the rental on a frozen food locker, or unless the butcher is one of your best friends, there are only two ways left to get any meat. Battle it out with the other John Q. Citizens in the stores, or patronize the black market. 'My, what big teeth you have, Grandma.'

'He Took His Farewell Trip Into That Promised Land'

The latest report of the Interstate Commerce Commission reveals that there was more than one collision every two hours and more than one derailment every hour on American railroads (U. S.) in 1944. The grand total of railroad accidents was 16,258 in which almost 500 people were killed and over 3,000 injured. Why, I don't believe it! I never saw that in my paper. You're right, brother, you didn't. The chances are you will be an old stiff with a nine foot beard before the average paper gets up journalistic guts enough to expose this situation.

The Interstate Commerce Commission has been exposing it for decades in its periodic reports. This august commission has investigated countless railroad wrecks since it was first set up in 1887. Before this present generation was born, it had come to the conclusion that most railroad accidents were preventable by proper design. It repeatedly called attention to the fact that the greatest single preventative of wrecks was the block signal system. It wheedled and begged the railroads to install this safety device for many years. But, no soap.

Today, out of a total of 167,000 miles of passenger road in U. S. over 50,000 miles have no sign of a block signal system. Only 8,000 miles of the total have automatic train control. And, when was the block signal system invented? So

help us, Hannah, *IT WAS IN 1842*. This is the record after *103 YEARS* of control of our railroads by 'Moguls and Empire Builders.' Big shots, my eye! Big something else! That's the Price System for you!

'Paper Will Win the War'

Is there a paper shortage? Yes, there is, for John Q. Citizen and his family. He is made aware of it periodically when a paper drive is on. He is exhorted on the air and in the 'free press' to save paper. Many stores display signs saying: 'Bring your own paper bags.' School boys are stimulated to wander up and down alleys pulling their little play-wagons to gather paper. A big drive is put on with all the power and pressure of modern propaganda. The boy who gathers and turns in the most old paper is declared a champion. There is a grand finale to the drive. A big meeting is held in some school. The politicians are all there, and the reporters too, of course. That's why the politicians are there. Much hot air is belched forth. Pictures of the champion paper picker-upper are taken. These somehow always include the politicians. There is a grand slam in all the papers to wind it up. Then everybody proceeds to try to forget about the paper shortage until some businessman or politician sets off the alarm again. Then we repeat the performance.

Yes, there is a paper shortage for the great majority. There is no paper shortage for business, though. In 1943 American business (U. S.)

spent \$2,000,000,000 for advertising. It used 1,000,000 tons of scarce paper for this purpose. In addition, 700,000,000 ton-miles of various kinds of transportation were diverted from the war effort to haul this drivel around. The volume of advertising in mid-1944 was running 40 percent above the 1935-1939 level. In 1944 over \$2,000,000,000 was spent for advertising also. Paper consumption for each of the last three years has been double the 1932 consumption.

'Free Enterprise' is doing its all-out darndest (at the expense of our natural resources) to win the war for Uncle Sam with advertising. What actually is winning the war is the Great Technology of America and the men and women at the front who are applying it. Business has been enjoying a glorious ride on the plush-lined cost-plus whatever-you-can-grab coat-tails of technology ever since Pearl Harbor. That's nothing new, however. They have occupied that favored spot for 169 years.

Pass the Gravy, Please

You've got to give business credit. It has prospered greatly during this war. In the first World War, we created 22,000 new millionaires. We don't know what the score will be for this war. The game is still on. But we do know that net corporate profits after taxes were higher in 1944 than in 1943 which, in turn was 10 percent over 1942. The Survey of Current Business said recently: 'It is possible that the estimates, especially for 1944, are still too low.'

In the midst of all this war prosperity for 'free enterprise' the Division of Research of the OPA reported on June 27, 1942, in *Estimates of the Distribution of Consumer Income in the U. S.*, that 65.7 percent of American families still got less than \$2,500 a year. Since the peak of production and employment were reached toward the end of 1943, it is likely that this low average went up a little. However, employment has declined over a million since then, and is dropping fast. So, we're probably not far from the June, 1942, estimate now. It will drop lower, much lower.

This is a partial record of the old Price System path of social progression today. Incomes for a small minority of the population are way up. Net corporate profit is way up. Crime is way up. Waste is way up. Accidents are way up. While education is way down. Public health is non-existent. Living standards for the great majority are still low. Insecurity and fear of the future stalks every citizen. Collective social morale sinks lower and lower all the time.

Yes, we are united on the home

front in the pursuit of personal profit and special privilege. If you have not been getting yours while the getting has been good these last few years, you have been just a plain, damn fool. Your best friend will be the first one to tell you. 'Get it while the getting's good, Joe; this prosperity isn't going to last forever.' That's the average attitude today. It has become practically a national byword.

This is the set of behavior patterns upon which the Price System places its highest premiums. These are the cultural orchids of a system of artificially enforced scarcity. This is the perfect fruit of the old path of social progression. In following this path, we are heading straight for a National and Continental social catastrophe of the greatest magnitude, in the postwar era.

If we fall into this hole, which we dug for ourselves, the only thing that can possibly save North America from a fascist chaos is Technocracy's Program of Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None.

POSTWAR PARTING OF THE TWO PATHS

'You Take the Low Road'

In the postwar period ahead, North America will be forced to choose between the two paths of social progression. One road goes up and the

other goes down. As a people, we cannot muddle along much longer. We cannot continue to carry Price System practices on one shoulder and sanctimonious pretensions on the

other. As the going gets rougher along the old path, we will have to do one of three things. We will have to dump our sanctimonious pretensions, abandon our Price System practices, or discard both. If we refuse, there is only one way out, and that is down.

The low road leads to fascism, American style. If the past history of special privilege groups is any indication, this will be the world's worst brand of fascism. The high road leads to abundance, distribution, leisure, equal opportunity to all citizens and economic security from birth to death. One might lump these aspirations all together and call them physical democracy. This is the new path of technological social progression.

Most Americans do not know what fascism is. They think that if the top fascist stooges are caught and hung by the heels, the problem is solved. Fascism is more than that. It is a policy of social operations, wherein there is a reversion of civilization to a lower order. It is a counter-revolution against the advance of science by the forces of reaction. It is an effort to freeze the production of goods and services by human toil and hand tools. The purpose of this is to escape from the threat of abundance and thus maintain scarcity for the great majority with special privileges for the favored few.

This is an effort to avoid the necessity to solve social problems and to preserve a dying economic order by force. Lastly, fascism is compulsion in race, religion and economics. We

have seen the pattern in Europe these last few years. Essentially, fascism is a conspiracy against the necessity for social change. There are three major forces involved: Corporate enterprise, that is, free enterprise in general; the political state; and those reactionary political, economic and educational pressure groups masquerading as spiritual institutions, i.e., ecclesiasticism or clericalism.

Social problems are more complex and acute in North America than in any other Continental area. This is because our technological development is greater here and our social development more laggardly. These opposing forces, one pulling forward and one holding back, have set up tensions in the social structure. As the process develops, the tensions become greater. There is a breaking down point somewhere, since these are physical forces operating in the social mechanism.

As a result of this growing tension, the pressure for social change is greater in North America than in any other area. A second resultant of this is that the danger of fascism is greater here than in any other area. We must remember that European and Asiatic fascism were largely financed and supplied by corporate enterprise, and encouraged by the connivance of political states and clerical hierarchies in the United States, Canada, England and France. Defeating fascism abroad is only the beginning of the big job that faces America. We must defeat it at home or go down the low road to fascism and social chaos.

POSTWAR PROPOSALS OF THE OLD PATH

For Want of a Nail

As we proceed with the analysis of our problem, Which Way North America, we reach the point of postwar proposals. First, we'll take the Price System's proposals and see what they amount to. Well, Sir, it would take a regiment of freudian specialists to analyze all these dreams. The Price System has thousands of postwar plans. Every minority pressure group has a private plan of its own, i.e., for its own group. Each one of these plans can be neatly summed up as a conspiracy against all the other minority plans.

This is the nature of the Price System, because it sets man against man, individually and as groups. There is no sense in quarreling with any particular group because of its behavior. This is dictated by the operating rules of the Price System. Before any one is entitled to press a social indictment against any individual or group, he must come into court with clean hands. Nearly every individual and group in America is as black with social guilt as his, or its, opportunities have permitted. Consequently, they can be dealt with only objectively as factors in the whole problem.

In all this hog wallow of confusion about the postwar period, there is no unified, overall design of social operations anywhere. It's a snarling welter of dog-eat-dog behavior pat-

terns. But once we leave this fetid atmosphere and climb up to the cleaner air of science, it will be found. Technocracy's program of Total Conscription is not a minority pressure group plan for the postwar. It is a scientific blueprint of social operations. Technocracy is not a minority pressure group. It is dedicated to America as a whole. Technocracy is coming into court with clean hands. Now, let's look at some of the screwy ideas the Price System is proposing to deal with America's postwar problems.

Count Your Pennies, One by One

There is a school of economists which says that the people's savings assure postwar prosperity for a long time. With that for a head start, they say, if we then balance our economy at say \$150,000,000,000 a year everybody will live happily ever after. There are one or two little flaws in this pretty picture. First is the fact that 65.7 percent of the people have been getting less than \$2,500 a year right along. Not much of it has gone into savings. Second, is the fact that the great bulk of this savings, estimated to average \$1,200 per capita by the end of 1945, is in the hands of a small minority of the population. *Business Week* stated in its May 5, 1945, issue that less than 25 percent of the \$230,400,000,000 of government securities outstanding at the end of 1944 was in the hands of

individuals. The rest is held by banks, insurance companies and corporations.

It is not the billions that are hoarded that constitute purchasing power. It is, as Carl Sandburg has said, the nickels and dimes that are spent on the main stem for 'a handkerchief, a mouse trap, a bowl of soup.' Then, about the idea of balancing our economy. A Price System is based upon scarcity, value and money. It must expand or die, after technology enters the picture. Scarcity, value and money are all variable factors. The only thing that can balance them is a natural or artificially enforced repression of their variability.

In the past the first force operated. In the face of the potential abundance of the Power Age, the only method left is to artificially repress the abundance. That's fascism.

Maybe whichever school of economists gets the inside track to the politicians' ears will make a sincere effort to balance this Price System economy. Regardless of that, the Price System will have to obey its own three cardinal rules, buy low, sell high, and keep things scarce. Maybe the leopard can change his spots. Maybe, too, a jackass can turn itself into a Golden Palomino thoroughbred. But we're from Missouri!

Old Gent With the Whiskers

Another school says that lower taxes will do the trick. This doesn't mean lower taxes for John Q. Averageman. Not at all. It means lower taxes for 'free enterprise.' Somebody

has to pay off the public debt, you know. They say that we owe it to ourselves. They say it's all in the family. Family or no family, the interest has to be paid. The debt has to be kept valid at all times. This spells taxes. So, naturally, the Sons of Mary are getting all set to once more unload their share of the burden upon the Sons of Martha. This has the same old familiar stink of the ages.

Then, again, 'free enterprise' says that if we would only get the government out of business and get more business into the government, every thing will be rosy. Rosy for business of course. Since 'free enterprise' conducted its successful strike in 1941 for cost plus as much as they could grab (while fascism was at our ramparts), it has been in the government up to its ears. If this idea goes far enough, a coalition of corporations would take over everything. That's fascism, too.

The Harpies Sing Again

Another school says foreign trade will create postwar prosperity. Let us not forget that while American technology (U. S.) has been greatly expanded in the last four years, other countries have not stood still. Canada is now the second exporting nation. Australia is rapidly becoming industrialized. Technology is surging forward in Russia, Brazil, India and other areas.

Canada is also pinning its hope for postwar prosperity on foreign trade. Our neighbor to the north is now fourth in steel production, third

in timber, tops in nickel and near the top in asbestos, platinum, radium, gold, aluminum, mercury, copper, zinc, lead, silver, arsenic, magnesium, molybdenum. It also produces rubber, tin, tungsten, chrome, gasoline, optical goods, chemicals, plywood, plastics, textiles, paints, lacquers and machine tools. Total Canadian production has been running more than twice its prewar capacity.

Canada now has an aluminum capacity of 500,000 metric tons a year. Recently it offered Australia a large stockpile of aluminum. The country down under, desiring to be independent, is building an aluminum plant of its own with 6,000 tons capacity a year. This net loss in foreign trade is symptomatic of a world wide trend.

Normally, 30 percent of Canada's total income is derived from foreign trade. Foreign trade has never been more than 10 percent of U. S. total business. In 1944 Latin America exported \$2,000,000,000 of goods to U. S. and imported only \$1,500,000,000. Foreign nations as a whole will have accumulated about \$20,000,000,000 in gold and dollars by the end of 1945. Chili, Venezuela, Argentina, Brazil, Mexico and other Latin American countries are boosting tariffs. There is a protectionist trend on. This is largely an effort to conserve gold and dollars for the purchase of industrial equipment for national development. Once acquired, there will be less foreign trade than ever. The storm signals are going up all over the world.

Conceding that Europe needs rebuilding, with what will she pay? If we get their gold and dollars in spite of tariff barriers, all we can do with it is to bank the dollars and bury the gold at Ft. Knox. We can't take their goods because that would shut our own plants down. Of course, we can stockpile rare metals. We are now, already, stockpiling high grade iron, copper and zinc ore from Latin America and she is complaining, already, that she fears these stockpiles will be a barrier to postwar trade.

All these nations becoming industrialized will themselves be in the world market in the post war era looking for trade. There is now a factory in every port. The Peek report to President Roosevelt in 1934 showed that the chief result of all U. S. foreign trade between 1896 and 1934 was a net loss to U. S. of \$22,000,000,000. But the harpies are singing their bewitching song again. Anything to get away from solving the problems of a Continent of 200,000,000 consumers.

When these things play out, we can always donate some more foreign loans to our brethren across the seas. This is a good way to divide up America's abundance. The loans will be used to buy American technology and resources and there is little danger of either being paid back. Truly, Uncle Samuel is the best and kindest Santa Claus of them all. The Cavaliers of Spain, the Warlords of China, and the Dons of the Argentine can certify to it.

'New Kinds of Things'

Another important sounding school of economic philosophers are those who hold that new industries will do the trick. There are new fields in plastics, television, mass production of houses, reverse cycle refrigeration, central heating, aviation, etc. According to these proponents, millions of new jobs will be created that never existed before. Let's be glad that these new developments are coming in. However, let's also look at the fact that the most of them will only supersede present methods of operating in the various fields. Plastics will replace inferior materials. Nylon and rayon will replace silk and cotton. Synthetic rubber will replace natural rubber, if the International Rubber Cartel permits.

Mass production of housing may replace the present conspiracy between raw material suppliers, contractors, and unions. Central heating may make inroads into our archaic system of individual house heating. Reverse cycle refrigeration is also up for admission into the select circle of economic exploitation. Each and every one of these promises to eliminate more jobs than is created.

The greater the degree of technological advancement, the greater is the amount of advanced technology applied to new industries. Also, the sooner any new industry reaches its peak of production. This, plus the replacement factor, equals less man-hours per unit of production and less total man-hours of employment. With the advance of technology, the

death rate of old jobs destroyed always exceeds the birth rate of new jobs created. How many new jobs were created by strip steel mills, by tractors, by diesels, by the cotton picker, the cane and beet harvester and so on?

All this Price System propaganda is designed to get your eyes off the ball. It is to get you worrying about side issues like politics, taxes, finance, honest money, etc. The revolutionary agents destroying the Price System are energy and technology. They proceed on their undirectional way with cold and utter ruthlessness. All the gabble in the world about 'new kinds of things' won't alter the fact that the sands of time are running perilously short for the Price System.

Then there are well intentioned proposals to build Valley Authorities similar to the T. V. A. on the Mississippi, the Ohio and other rivers. These political hydrology plans are totally unrelated to each other. None of them are out of the discussion stage yet. If past history of similar projects is any guide, nothing will ever be done until all the pork barrels are filled in every sovereign state that happens to have a river running through it.

Then, of course, if the worst comes to the worst, we, the people, can always rake some more leaves, build some more parks and jails, and lean on shovels again. Take these and all the other Price System plans which we haven't space to enumerate and add them all up. The total comes

out to more and more Price System muddling. It's all picayunish. There is no hope for the people as a whole

and less security than ever before. If that's what it takes to make us think, that's what we deserve.

POSTWAR PROPOSALS OF TECHNOLOGY

'There's a Land That I Heard Of'

The proposals of technology for the postwar era divide themselves into two groups. These relate to North America's physical and its human resources. Let's look them over.

Technology says that, first of all, we must protect and conserve North America's number one resource, the land. To do this, we must reforest almost the entire nation. We must build thousands of earth dams at the headwaters of every river in North America. Reforestation and earth dams will help to control the flow of water. They will help to prevent floods and soil erosion. They will help to raise the underground level of water.

This project must be planned and executed on a Continental scale, because North America is one unified, geophysical area. All the lakes and rivers of North America must be hooked together into a unified waterways system, with deepened rivers and connecting canals. In effect, this is a Continent-wide system of inland waterways. When integrated as one system, it will restore the balance of nature between our forests, croplands, rainfall, waterflow and the underground water table.

Along with a Continental waterways system, we must construct a

Continental system of hydroelectric power dams. It's a natural part of the hydrology system. The purpose of this is to preserve our irreplaceable resources of coal and oil. With a Continental system of power dams, we need a Continental system of power transmission. Much of North America's available hydroelectric energy is in remote, unsettled parts. Electric power can be transmitted underground by direct current for about 3,000 miles with a line loss not exceeding 10 percent. This type of power transmission has been approved and okeyed by the best electrical engineers in America.

'Make No Little Plans'

Along with the Continental waterways, power dams, and power transmission design, North America needs a Continental system of super-highways. These would be very wide roads, with co-axial cable controlled speed lanes, no more than three percent grades or six percent curves. There would be no grade crossings whatsoever, but all overpasses and underpasses with cloverleaf intersections. This would also provide North America with a continuous Continental system of air fields for defense. Every foot of broad highway would be available in time of war

for the landing and taking off of flying wings.

The waterways system will also provide a permanent and unsurpassable transportation system for bulk freight at the lowest possible cost. It will furnish marvelous recreational facilities in time of peace and be constantly available for use in time of war. In other words, it is possible to bomb railroads and highways into rubble but not rivers and lakes.

This is a terrifically big job. It is truly worthy of North America. Anything less is picayunish and futile. The entire program of technology regarding North America's natural resources, of which this is only a small part, is a must. We must do it to prevent America from becoming a desert, to preserve our dwindling resources, and for Continental defense. The Price System will never do it because it would cost too much and because there's no profit in it. But technology can do it. The blueprint for this concept for a Continent is all worked out. Technocracy has the design.

Am I My Brother's Keeper?

Now for technology's proposals regarding North America's human resources. The draft records showed that America is in desperate need of a real public health system. This is another must because poor health is a national and Continental liability. This health system must be complete and free of cost to every citizen regardless of race, creed or color.

Every school of the healing art which has a scientific contribution to make will be represented. Individual health is public health and vice versa. Therefore, a real public health system will be compulsory. We'll have to be healthy as a duty to our common motherland.

North America also badly needs an educational system fit for the Power Age in which we live. This also must be complete and compulsory for all our young citizens, regardless of race, creed or color. It must be a **PUBLIC SCHOOL SYSTEM**.

Going a little further, it can be said that we need a housing system designed to house people instead of extracting rents and profits from them. The two functions produce entirely different end products.

Health, education and housing. These are only three of technology's proposals about what must be done regarding America's human resources. You can let your imagination run along the highways and by-ways of eugenics and eugenics. Wherever they affect the general welfare of humanity, science has the answer; technology has the design. But the Price System doesn't give a damn about such vital problems. It is organized to buy and sell for a profit. The age-old question still stands. Do you really want to be your brother's keeper? Technology, alone, can make it possible.

Wanted: One All Time Plan

If we are going to do the tremendous job which faces North

America, we have to get going. The North American Price System is busy conspiring with fascism all over the world to sell our birthright for a mess of profits. It holds forth nothing for us in the postwar period except a few more crumbs from the rich man's table. Have we become a nation of beggars, of cheap, money hungry chiselers? This is not the destiny of America. This is fascism.

If we are going to do this big job ahead and do it properly, several prerequisites are necessary. We have to adopt National and Continental policies which will do the following:

- a. Abolish all minority group's pressure on the Government.
- b. Conduct all industrial, agricultural and social operations according to technological principles.
- c. Unite all North Americans for the one common social objective of raising and protecting the general welfare.

The doing of this job along technological lines will guarantee a favorable postwar position to all citizens. It will assure a high standard of living for a long period in the future. It will make North America impregnable to attack from the outside and impervious to decay from within. It will create here the highest civilization the world has yet seen.

It is possible and practical now. We have the men, machines, materiel and knowledge with which to do it. We have the program, the design of operations. It is all ready. What are we waiting for? More hamburgers in a land of T-Bone Steaks? More crumbs from the rich man's table? More appeasement? More peace in our time? None of these crawling desires will avail us aught. The dictum of technology is inexorable. 'Unite, Operate and Prosper—or Suffer the Consequences.'

CONCLUSION

The Colonel's Lady and Judy O'Grady

After all is said and done, what is the one thing that all Americans want, the one thing on which we are all agreed?

Is it more waste, more crime, more accidents, more war, more depressions? No? Then, maybe it's less public health, less education, poorer housing, less equality of opportunity,

less security, less abundance, less distribution, more scarcity and lower incomes? No? Well, then, maybe it's more profits for business, more freedom for free enterprise, more and worse Price System muddling around with social problems. No, of course not, don't be silly. We don't want any of these things.

If we do not abandon the old Price System path of social progression in

the postwar era, it will lead us down the low road to American-style fascism. Then we will get all these social malignancies forced upon us, whether we like them or not.

NO! The things which all North Americans want is more goods and services and better goods and services. And, **WE WANT THEM NOW!** On this, we are unanimous.

The record shows that nearly all the worthwhile things in modern civilization came in since the industrial revolution began. We found them along the new technological path of social development. The conclusion becomes irresistible then that the only way to solve America's social problems is to apply a maximum of technological methods and a minimum of Price System interference.

Technology must be freed from the concentration camps of the Price System. Then it will be able to apply engineering principles to our engineering civilization. Freedom for technology is the greatest concept of freedom for which men have ever striven. It embraces within itself all the other more abstract freedoms and much more that is real, besides.

Divided, We Hang Separately

Most North Americans today are still like our primitive ancestors. We

think we can survive by a combination of hiding from, running away from, or outwitting our social problems. It can't be done that way now. Individual problems have become collective problems. Science and technology have made us one, for better or for worse. We must choose between the old path and the new path of social progression.

All that is necessary is that we have as much sense as a hound dog has. When a hound dog is on the trail of game, he follows his nose. He follows the scent of his prey because he knows that's the only way he'll ever catch up with it. All we, as a people, have to do is to follow the facts. They are like the scent along a trail. They and they alone can lead us to the things we want.

Howard Scott put it all into one sentence in February 1937 in A-9 of *Technocracy Magazine* in these words:

The aspirations of human society on the North American Continent must be *BUT* the projection of the technological pattern of this Continent.

That is the answer to our question: Which Way North America? Peace and Abundance—or Chaos and Scarcity?

Investigate Technocracy!

ADD DEFINITIONS

ECONOMICS—A rough approximation of a series of disagreements on the same foolishness. (The 'foolishness,' of course, refers to exchange

—the Price System's basis of social control through the exchange of money for resources, materials and services.)



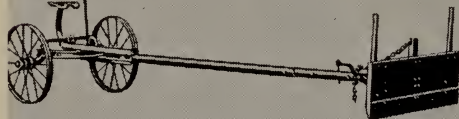
Photo: Courtesy The Heil Company

yesterday and Today. 'Let's take a trip in memory's ship' back to those good old days to see how good they were. This old dump wagon was good as dump wagons went then. It had a chain hoist and drop, its lever control. Loaded with hand shovels, its capacity was one yard or so of dirt. Creaking along three miles an hour with the power of two horses, it was tuned to the tempo of yesterday. Axle grease, anure and human labor was its theme song. Out of such rose the philosophy of toil.



Photo: Courtesy LaPlant Choate

human or animal toil is out of order today. Where would the dump wagon be where big yardages of dirt be involved? You guessed it, in the dump. Here is a 'Carrimor' scraper, leveling and rough grading a highway. It digs, hauls and spreads its own load. It's capacity is many times that of a dump wagon. The technician does the work of dozens of horses and men and does it faster, cheaper and better. Science, engineering and power is the theme song here. Out of it rises the dictum of technology.



Russell "Bull Dozer" or Marsh Filler

atalogue 1917

Russell "Bull Dozer" or Marsh Filler

It is built for filling in ditches, marshes or for shoving dirt a dump where wagons cannot travel. The power is behind blade, so that it shoves the dirt into ditch or over embankm

Codev

Russell "Bull Dozer." Weight 800 lbs. Fag

Photo: Courtesy Caterpillar Tractor Co

Here is the original bulldozer, from a 1917 road machinery catalogue. Our old friend the horse was first source of power. Technology was already writing his release from toil then. Between 1915 and 1 motorized equipment displaced over 10,000,000 horses on farms besides those displaced on earth mo operations and other work. In 1944 the number of horses on farms had declined to about 9,000,000, lowest figure since 1874. Dobbin did his sweaty best to help build America. It all helped.



U. S. Navy

But, it's no good today! Times have changed. You couldn't wage a trans-Pacific war 8,000 miles a with horse-powered bulldozers. Here is a Baker, hydraulic controlled bulldozer spreading material f landing barge jetty somewhere in the South Pacific. Filling shell holes, leveling airfields, excavating, solidating beach heads, even burying Japs, or whatever is needed, they do a swell job of backing up man behind the gun. It takes technology for any big job today. Begin to catch on?



Photo: Courtesy Ingersoll-Rand Company

...ll harping on the good old days. This ingenious water-wheel bellows was considered good in its day. ...had the power of 20 horses in converting water power to air power to fan the fire in a cold blast ...arcoal furnace, as an aid to combustion. Yesterday men had the will to seek a way, but the correct ...y was not found until technology and more energy became available. Today we have the way, but ...ere can we find the will? The will to do what? To distribute the abundance we can now produce.

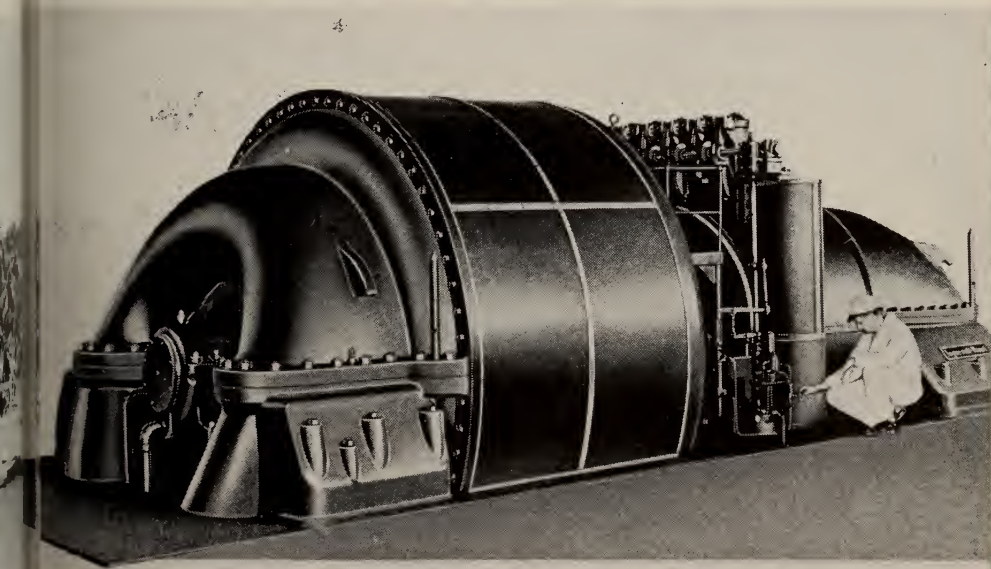


Photo: Courtesy Ingersoll-Rand Company

...s Turbo Blower furnishes the air blast for furnaces today. It has the power of 14,500 horses to compress ...e volumes of air. Yesterday men used their ingenuity to escape from scarcity. Then came technology! ...ay we use our ingenuity in an effort to escape from the abundance brought on by our ingenuity, so as ...get back to the scarcity we used our ingenuity to escape from in the first place. Now, if we can ...velop enough ingenuity to outwit our own ingenuity, our social problem is solved.



Photo: Courtesy Towmotor Corpora

Not much ingenuity here. It's the good old way of heave ho and a couple of grunts. Look out, Short! If that case slips, there will be some sore shins around the place. Total power lifting here is $\frac{3}{10}$ th one horse. It's enough to make poor old Dobbin blush for his friend, man. 'And they retired me to Ho Heaven.' Technology is at work here too, releasing man from the prison of his own weakness. The point is, can we see the point of what it all means? Every picture tells a story.



Photo: Courtesy Towmotor Corporation

Here's the way you lift with technology. Gross weight of the packing case is 3,600 lbs. Total power on the job is equal to 40 horses. The ad says: 'Let Men Direct Power, Not Generate It.' That's a swell idea. It's exactly what Technocracy says about social problems. Yesterday's toil generated yesterday's philosophy of toil. You have to get rid of the philosophy, as well as the toil. Today's technology is generating tomorrow's necessity to do it. Why do anything the hard way? Do you see?



Photo: Courtesy Firestone Tire and Rubber Co

Here that young but skilled revolutionist, technology, is at it again. This time it is electronic curing of rubber. See: Technology Marches On, in this issue. The process can increase output over 50 percent. Goodbye, man-hours. It does in minutes what it takes hours to do with steam. Large, hard rubber wheels that require 5 hours with steam are cured in 8 minutes; brake blocks, 7 hours by steam, 48 minutes by electronics; army tank treads, 60 minutes by steam, 28 minutes the new way; and so on.

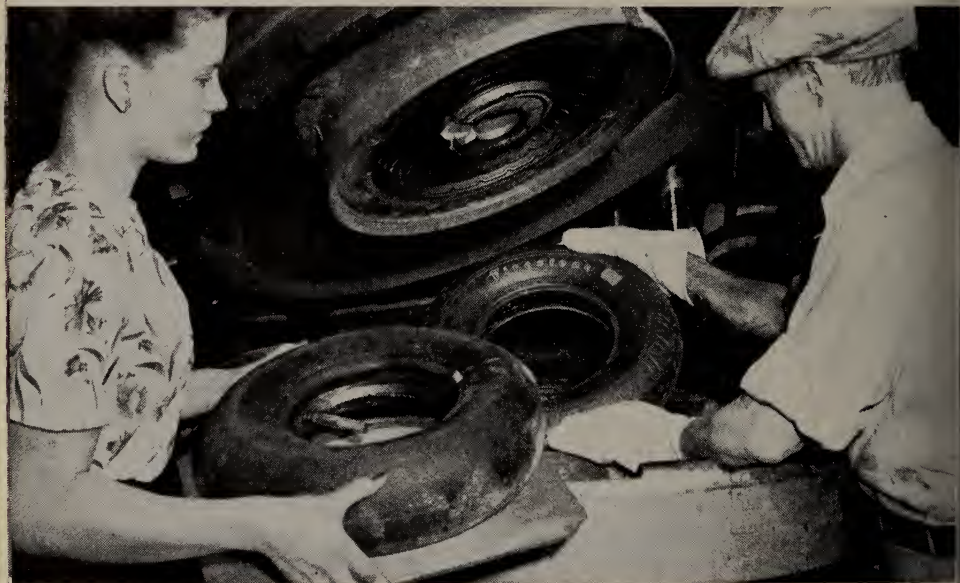


Photo: Courtesy Firestone Tire and Rubber Co

A small tire, after preheating electronically, is finished with steam. Tires are vulcanized in 10 minutes by unit in use by the Army in combat zones. It is unnecessary to remove tire from the rim or the inner tube from the tire. The complete outfit weighs only 500 lbs. These engineers are getting good. Now, if they can dope out a formula to maintain purchasing power, while decreasing man-hours of labor, that will be something. On second thought, it's already been done. Ask any Technocrat.

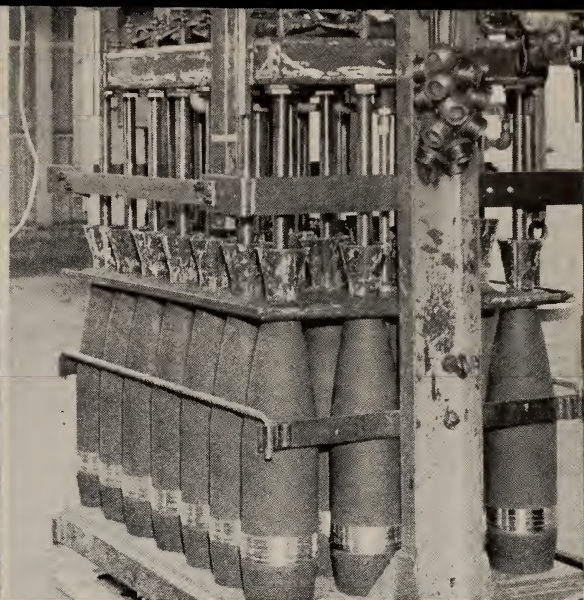


Photo: Courtesy Akron Beacon Journal

Yesterday they filled artillery shells with T.N.T. by hand. Today at the Ravenna Ordnance Center, the mechanism shown fills 28 at a clip with pre-measured quantities. The process will save 4,900,000 man-hours in 1945. Delivery of shells to overseas zones is greatly expedited. This spells more trouble for the Japs. They will have a bellyfull of American technology before this war is over. In America we will also feel its full impact in the postwar period. It's high time to be getting ready.



Signal Corps Photo

Yesterday, American soldiers landed on hostile shores in rowboats. Today, they move in on steel barges. This vessel is racing for an island in the Admiralty group. Yesterday, our men ate embalmed beef; today they eat the best. Yesterday, more died from disease than by enemy bullets; today, they have the best medical care. Yesterday, they fought for the patterns of yesterday. Today, they fight to keep us from going back to yesterday. The difference between yesterday and today is technology.



Signal Corps Photo

Here is a close-up view of the human furnace at Buchenwald. It is the open door to yesterday; the only way there is to go back. Skulls, bones and burnings have marked the trail of fascism all down through history. The pattern is familiar. The counter-revolution against social change today continues. Fascism has been defeated on the military field but not on the social and industrial field. That is where its roots are. America must liquidate fascism at home before it can defeat fascism abroad.



Photo: Courtesy Burlington Railroad

This streamliner is typical of today. It's a hint of what the future holds. The oxcart is symbolic yesterday. It's gone, let it rest in peace! We can't go back except by mass slaughter. Today is here now. Tomorrow and the New America are just around the corner. Yesterday, the pioneers had courage to venture into the unknown. The courage needed today is the courage to move forward into a predictable and known future. North America is outward bound toward its greater destiny. Let's Go!

America: Shall We Make It Beautiful?

By Lester B. Mull

Only Ten Percent Every Payday?

America was discovered, settled and developed industrially by people who were willing to take the risk. From their heroic ventures come the greatness of this Nation.

Here, truly, were practical dreamers, men of amazing vision, of indomitable courage and of vast determination. Although faced by untold difficulties, they drove ahead to develop the vast rich resources of America and to make it the largest granary of the world.

Along the paths they blazed throughout the nation, huge industrial centers, towns and cities sprang up, thereby making it possible for the raw material to flow to the hungry factories, and the finished product to be moved to near and distant markets.

Great changes have taken place in America since Dec. 7, 1941.

Our men and equipment have been transferred to terrains almost unheard of before the hostilities began.

Starting practically from scratch, America has built the most efficient and productive industrial war machine the world has ever known. However, this could not have been accomplished had we adhered strictly to prewar production methods.

Behind our production efforts are the scientists, engineers, designers,

research men, and mass production experts. There are also our engineer students, the men of tomorrow, on whose shoulders rest our future, as well as the industrial future of America. Thousands of these young men, already in uniform, have discarded until this debacle is over the desire for peacetime pleasures, in order to take the equivalent of a four year engineering course which is made available to them in a few months' time. This technical knowledge they are acquiring is now being applied on many battle fronts, to America's airplanes, guns, tanks and ships.

They are truly and patriotically behind the war effort. And behind these students of science and engineering, with endless patience and devotion, giving freely of their minds, hands and time, should be the American people.

Shade of Dan'l Boone

However, through careful investigation we find the shows, ball games, fishing boats, dance halls, beauty salons, and beer parlors well filled with Americans who have enjoyed three years of steady and prosperous employment. One reason for attending these places is because we must comply with the gas conservation program. Otherwise, the mountain resorts and fishing streams would be visited more frequently.

Yes, our forefathers have helped to make our future possible, but they never dreamed that we would become physical barriers in our own progress, too slow to comprehend the change which has taken place in man's world in the last 100 years, a change almost overnight, from the physical jungle into a wonderland of science and machinery, too slow to think and act intelligently after we have acquired the mills, mines, factories, raw materials, energy and power which would assure to every man, woman and child on this Con-

tinent a high standard of living from birth to death.

Nevertheless, the efficiency of America's high productive mechanism is increasing and at the same time the kilowatt hours are leveling off.

Americans, your opportunity to acquire physical wealth by human toil has passed, and it is now time that we learn how to live in our new world.

The day is fast approaching when we are going to be organized for science, or unorganized for chaos.

ONE GEOPHYSICAL UNIT

Army photographers in B-17 and B-24 bombers last year took aerial pictures of an area 292,000 square miles in Northern Alaska. 'Four-fifths of it was virtually unmapped before . . . much of it had never been seen by human eyes.' Using the newest trimetrogon photography, they mapped topographically an area 'as big as all of New England, New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, West Virginia, and Tennessee.' Rivers that have been 'meandering toward the Arctic Ocean for untold centuries without ever being named,' show on the maps. The surveys also 'will show light on possible rich mineral deposits hundreds of miles from present human paths,' according to a report by Director William E. Wrather, of the U. S. Geological Survey.

At the southern tip of the Continental area, U. S. Army pilots have discovered the source of the Orinoco River, 1,700 miles long. A deep gorge in the mountains between Venezuela and Brazil was found to be the source. (It adds 1,000 more square miles to Venezuela's territory, as the river, by treaty, marks the boundary.)

In the year 1639 an explorer discovered

that nature had built a waterway. It was practically a canal, between the upper Rio Negro, which empties into the Amazon, and the southern end of the Orinoco River. The canal, which Von Humboldt called 'the only example of bifurcation forming in the very interior of a continent a natural connection between two great rivers and their basins,' is entirely in Venezuela. It has been named the Casiquiare Canal, and is being deepened and widened by U. S. Army engineers in cooperation with the Venezuelan government. Before the war is ended, it is expected to make use of the Casiquiare in moving barge loads of strategic minerals and tropical products.

It is even less known that the two largest waterfalls in the world are located in the northeastern corner of South America. The highest, in Venezuela, discovered about eight years ago by Jimmy Angel, an American aviator, is Angel's Falls, estimated between 3,000 and 5,000 feet high. Next in size is the Kukenam Falls, in British Guiana, 2,000 feet. (Ed. Note: Niagara Falls are less than 170 feet high.)

A conservative is a man who believes nothing should ever be done except for the first time.

Primer of Technocracy

By Education Division 8741-1

This series began nine issues back and concludes with this issue. It does not constitute a complete exploration but only an elementary introduction to some of the primary principles of the Body of Thought and the Organization known as Technocracy. In this article we will sum up some of the points brought out previously. In the future this department will attempt to illustrate fundamental principles of Technocracy by hooking them up with current events and incidents of importance on the contemporary social scene in North America.

Energy Is Basic

In the beginning there was energy. This physical force animates the entire universe. There is no manifestation of matter apart from energy, and vice versa. Being a physical force, it can be measured. When man first learned how to control fire, ages ago, he made one of the first practical applications of energy in his long social progression. Next came the domestication of plants and animals and the use of fossil fuels. Each one of these developments added to man's energy differential over the opposing forces of his environment. Man was learning how to tap into that great stream of energy flowing ceaselessly throughout the universe and to divert a part of it to his own use.

As time went on, crude windmills and waterwheels were developed. These and other simple mechanical devices in the nature of hand tools were about as far as man advanced, prior to the industrial revolution. For thousands of years mankind lived in a simple handicraft agrarian economy characterized by human toil and ever

present natural scarcity. There were no machines or technology to speak of. The ability of men to produce physical wealth was always geared down to the power output of the human body, plus the number of workers available.

Then, the industrial revolution and North America came on the world scene, both about the same time. Things began to change. The ability of man to produce rose with each new advance in science and technology. Exploration and conquest carried the new order into remote corners of the world. North America forged ahead because it had a great wealth of available resources, a natural chain of navigable rivers and lakes for transportation, a favorable climate, a laissez-faire political and business economy and a hardy race of pioneers who were out to make their fortune.

One Way Street

While the rest of the world moved rapidly enough into the first stage of the industrial revolution, certain more

avored areas developed into the second stage. In the first 169 years of its national existence, U. S. moved through both stages and on into the third stage. Canada, although a separate political entity in North America, kept pace with technological development in the U. S. Most of the rest of the world remained behind in the first or second stage of the industrial revolution.

This disparity of industrial development and capacity to produce between North America and the rest of the world is what makes the North American social problem unique. It is not a problem of how to divide up a scarcity equitably by philosophical and political means, but of how to distribute an abundance by engineering methods.

During all past history, the controlling superstructure of business, finance and politics that had developed out of the handicraft agrarian culture became fixed and static. While the underlying base of society, the means whereby men lived, was changed by the industrial revolution, this superstructure remained unchanged. This disparity of development is the root cause of the North American social problem. We have moved into a new physical environment but are still trying to operate our social structure by the old Price System methods developed thousands of years ago.

All the worthwhile things in American civilization came about as a result of the advancement of scientific knowledge in the last few hundred

years. The problem that North America is confronted with today is a problem of how to apply the methods of science to a solution of social problems. They cannot be solved any other way. Out of this social impasse, created by our advancement along scientific, technological, engineering and industrial lines and our lagging along social lines, arose a new body of thought.

Enter Technocracy

This new body of thought is the social aspect of science, or a method of applying scientific principles to social problems. It is known as Technocracy. It is a uniquely North American solution of a uniquely North American social problem. Technocracy derives nothing from any old or new world philosophy or political ideology or social reform or class warfare. It is an engineering analysis and synthesis for an engineering civilization. Technocracy arises out of the general field of science. One might say it is a new branch of science, the Science of Society.

The Organization of Technocracy is composed of a cross section of North American citizens who are educating their fellow citizens in regard to the nature and only possible solution of the American social problem. Technocracy is not a pressure group and has no axe of its own to grind. It merely illustrates the trend of events and presents unvarnished facts for consideration. It is the vehicle for transmitting the Body of Thought. It is a job that has to be done.

The methods of Technocracy, analysis, synthesis and operations are identical with those of science in the general field. They arise out of observation, research and experiment. All the internal and external operations of the Organization cling closely to scientific principles. In this respect Technocracy is somewhat of a pilot model of the next most probable form of social control. Before we can understand this, it is necessary to know what types of social control have existed in the past and what type we are living under now.

Four Stages of Social Life

Broadly speaking, we can divide man's social history into three periods. The fourth one is the next most probable type. The four stages of social life presented below can be classed as (1) Remote past; (2) Middle past; (3) Present; and (4) Future. They lap over each other to a great extent but there is a definite difference between them. This will be noticed more readily if one compares the first stage with the third, or vice versa.

STAGES OF SOCIAL LIFE

Stage	Basic Production Methods	Rules and Operating Characteristics	Method of Control	Superimposed Social Institutions
1. Autocracy	Hunting Fishing Agriculture Human Toil	Communal Barter Natural Scarcity	Rule by One	Tribalism Nepotism Priestcraft
2. Autocracy with Oligarchic Features	Agriculture Handicraft Human Toil	Barter and Price System Valuation and Exchange; Natural Scarcity	Rule by the Few	Chattel Slavery Feudalism Churchdom
3. Oligarchy with Democratic Features	Decreasing Toil and Handicraft; Growing Use of Technology and Energy	Price System Valuation and Delayed Exchange; Growth of Debt; Artificial Scarcity; Insecurity	Participation in Rule by Many but Actual Control by Few	Political - Commercial Ecclesiastical
4. Technocracy with Physical Democracy	Complete Technological Operation; Full and Balanced Lead Production	Non-Price Energy Cost Distribution; Abundance; Security; Leisure; Equal Opportunity	Rule by Vertical-Functional Control Within the Framework of a Scientific Design	Non-Political Non-Commercial Cultural Functional

From this it will be seen that the civilization of the future will be all that the civilizations of the past could

not be. The fourth stage of social life is what North America is headed for. It is possible to achieve this

right now on this Continent. We have the men, machines, materiel and resources. The alternative is social fascism, American style.

It means a reversion of American civilization to an earlier stage of development. If we fail to solve our social problems scientifically, they will be disposed of for us by civil war and fascist imposition. In the process, many millions of Americans must join their ancestors.

Technocracy's analysis has been ridiculed and smeared, but it has never been answered. There is no an-

swer to the correct answer. We cannot survive today as did our primitive ancestors by a combination of hiding from, running away from, or trying to outwit our natural enemies. The natural enemy of man today in North America is not the wild beasts of the jungle that his forebears had to compete with. It is the social system that he himself has made. It is the Price System, which is another way of saying it is ourselves, for the Price System is all of us.

When are you going to wake up and investigate Technocracy?

STRAGGLERS TAKE NOTICE

'The entire air war is a race to determine whether we or the Germans can keep 60 days ahead in scientific and technological developments. Such is the message brought back to America by William Benton, vice president of the University of Chicago. Authority for Benton's statement is Sir Arthur Harris, head of the bomber command in England, *who attributes England's survival to development of radar*. Benton said: "With radar 15 planes can do the work of 15,000. The battle of Britain was won by physicists and scientists in the universities.'" *Chicago Herald-American*, 10/11/43.

'At the present time, about 75 percent of the men discharged from the services want to go back to their old jobs. . . .

'Officials said this percentage probably will *decrease* as men remain away from their jobs longer and receive more of the *technical training* in which the modern army specializes.'

—*Christian Science Monitor*
12-21-43.

'World conditions after the peace will demand more individuals with broad educations than at any other period of world history. There will, of course, *be great demand for engineers and other scientists.*'

—Lt. Gen. Charles E. Kilbourne,
Supt. of Virginia
Military Institute.

The greatest social service business men are doing is putting other business men out of business.

Technocracy and Your Trade

The Automobile Worker
By Organization Division 8741-1

'The development of the motor vehicles industry is almost synonymous with the growth of mass production methods. In no other segment of the economy have rationalization, specialization, integration, and general mechanization of the productive processes been more highly developed.' (TNEC Monograph No. 22.)

Forty Dazzling Years

In 1899 there were only 2,000 workers employed in the automobile industry. By 1939, according to *Automobile Facts and Figures* for 1945, total employment had risen to 402,000. In 1900 there were 4,192 motor vehicles produced. In 1939 production was 3,577,292. This period of forty years covers the rise of the automotive industry, and also the rise of America's new technology, as a whole.

According to these figures, the production of motor vehicles in 1899 was less than 2 cars per man-year of employment. In 1939 it was about 8 cars per man-year. This amounts to about a 300 percent increase in output per man-year in 40 years. If the methods of motor vehicle production had remained unchanged between 1899 and 1939, the rate of increase of production would have mounted only in proportion to the increased number of workers employed. Then the 402,000 automobile workers of 1939 could have produced only about 800,000 motor vehicles. But they actually produced over 3,000,000. How

come? The answer is—energy and technology.

Figures are not at hand for the earliest years. However, in 1914 there were around 200,000 horsepower of prime moving engines and electric motors in use in the motor vehicles industry. In 1939 there were 853,672 horsepower of prime movers and 2,231,363 horsepower of electric motors in use. The technological improvements introduced into the motor vehicle industry between 1899 and 1939 are too many and varied even to attempt listing here. This industry is a classic example of modern mass production.

Our illustration, above, of the production per man-year can be depicted better by the index of unit labor requirements in the motor vehicles industry. This means the amount of labor required to produce one car, or truck. In the TNEC table of unit labor requirements, the year 1926 is taken to represent 100. With this as a standard, we can trace the falling demand for labor as technology and production increases. In 1919 the index of unit labor requirements stood at 183. In 1929, when the all-

time peak of production was reached, it stood at 78.5. By 1936 it had dropped to 67.8.

There is still another way to illustrate this trend by taking the index of output per man-hour of labor. The WPA National Research Project index takes the year 1929 to equal 100. With that as a standard, we can trace the rise in output per man-hours as technology and production increases. In 1919 it stood at 42.7 percent of 1929. By 1936 output per man-hour had soared to 115.7.

Watch The Jobs Go By

In 1941, the last peacetime year of motor vehicle production, total employment stood at 570,000. Harking back to 1899, when employment was a mere 2,000, this sounds impressive. Sixty percent of this 'new employment' had, however, been reached by 1919 and over 95 percent by 1929. Very few 'new jobs' have been created since then. We must also remember that a substantial part of this so-called new employment was merely replacement of former employment that existed in the carriage and wagon industry prior to the advent of the motor vehicle. It is not all 'new employment' by any means.

In 1929, 448,000 automobile workers produced 5,358,420 motor vehicles. In 1941, 570,000 workers produced only 4,838,561. In other words, 122,000 more workers in 1941 than in 1929 produced 419,857 less cars. This seems to be contradictory. We must bear in mind, however, that there were over 32,000,000 cars, busses, taxis, tractors, trucks, etc., al-

ready registered and in use in 1940 before the 1941 production was completed. Thirty-two million motor vehicles need a lot of replacement parts. The figures on total employment include workers necessary to make replacements and parts. So that, while 400,000 less cars were made in 1941 than in 1929, replacements and parts for 6,000,000 more motor vehicles than were registered in 1929 was included in the total production.

Then, too, figures on total employment are meaningless in themselves. It would be possible to double the number of employed by reducing the hours of work accordingly. If that were done, wages would have to be reduced by half. Otherwise, unit labor costs would go too high. The factor which determines purchasing power is the total man-hours of labor employed. This is a product of man-hours per unit of production, multiplied by the number of units produced. As we have seen, output per man-hour has been constantly rising, while unit labor requirements have been falling.

One More Postwar Plan

The United Automobile Workers have a postwar plan for the industry they work in. It is an ambitious plan. It seeks to create 1,000,000 jobs in the motor vehicle industry. It is asserted that even in the best pre-war years, the industry never reached capacity operation. This is defined as having been about 6,000,000 cars a year. We haven't figured out the load factor in the industry for the pre-war

years, but it's a cinch it wasn't any too high.

It is proposed to raise production to 10,000,000 cars and trucks, etc., a year. A sizeable proportion of this total, running from 10 to 20 percent, is scheduled for export. Where the foreign nations will get the purchasing power with which to buy up to 1,600,000 cars a year from the U. S. is not stated. Also overlooked, apparently, is the fact that England, France, Italy, Germany, Russia and other European nations also have producing motor vehicle industries.

About 8,000,000 cars a year are scheduled, in the U.A.W. plan, for domestic consumption. Where the American people will get the purchasing power with which to buy 8,000,000 cars a year is not stated either. The U.A.W., however, has a National Program to go along with its plan for the automotive industry. This is calculated to attain a 60,000,000 job economy in the postwar era.

We have no quarrel with this plan. It is much more far-seeing and socially conscious than anything advanced by the troglodyte minds of the financiers who control the motor vehicle industry. But it completely overlooks the overall facts of American industrial history and the records of the automobile industry. Succinctly stated, this can be put into one sentence. 'The only way to produce more is to apply more technology and less man-hours of labor.' That is the way we have been doing it, not only in the motor vehicle industry but in all manufacturing.

In *Technology and Livelihood*, pub-

lished by the Russell Sage Foundation in 1944, there is a table showing the rise in population, wage earners, production per wage earner, and volume of physical output in all manufacturing industries between 1899 and 1939. Taking the year 1899 to equal 100 for all four factors, the following changes occurred in these 40 years: Population rose from 100 to 175; wage earners rose from 100 to 187; production per wage earner rose from 100 to 199; and volume of physical output rose from 100 to 373.

This sums up as follows: Population increased 75 percent; number of wage earners increased 87 percent; production per wage earner increased 99 percent; but physical volume of production increased 273 percent. *Technology and Livelihood* observes:

Most significant is the fact that *increase in production out-runs the rate of increase both of population and of workers employed.* (Italics theirs)

Could anything be plainer than this? If you want to produce more of anything, whether it is shoes, ships or automobiles, you must install more technology and energy and displace as many man-hours as possible.

One More County Heard From

John Scoville, an economist for the Chrysler Corporation, made a speech one time. It was given before the Econometric Society of New York, December 30, 1935. During the course of it, he made a wild-eyed statement. This was to the effect that

the motor vehicles industry, with all of its contributory services and materials employed perhaps—

—close to 8,000,000 or about one-sixth of the gainfully employed. Probably not more than 3,000,000 of these have been taken from the ranks of the railroad employees, the carriage makers and the harness makers. That leaves about 5,000,000 extra jobs created by the advent of the automobile.

Technology and Livelihood proceeds to tear this propaganda to pieces, in typical restrained and dignified language. It cites four sources to refute Scoville's superficial conclusion. These are the Census Bureau; the Biennial Census of Manufacturers; Fabricant Solomon's Study, Employment in Manufacturing 1899-1939; and the National Bureau of Economic Research Comparable Figures for 1899-1937.

These sources are in the form of a table listing employment in the eight largest industries between 1899-1939. The industries listed include the largest outside industries contributing services and materiel to the automobile industry. They are steel and rolling mill products, cotton goods, lumber and timber products, printing and publishing, electrical machinery, apparatus and supplies. Rubber tires, tubes, etc., are not on the list. The peak of employment in these lines, though, never went much over 60,000 in the pre-war years.

Total employment in manufactur-

ing in 1899 was 4,495,900. By 1939 this had risen to 8,584,100. Now, if Scoville's statement is correct, there should have been 5,000,000 more jobs in 1939 than there were in 1899. Simple addition shows that 4,495,900 plus 5,000,000 equals 9,495,900. There were only 8,584,100 jobs in existence in manufacturing in 1939. Subtracting 8,584,100 from 9,495,900, we find that there's a shortage of 911,800 jobs somewhere. Perhaps John Scoville had them up his sleeve when he gave that speech. If we remember correctly, 1935 was about the middle of the Great Depression. We wonder why Mr. Scoville held out on these 911,800 jobs when they were needed so badly!

You Can't Fool All the People

Referring to Scoville's statement,

Technology and Livelihood observes:

—the automobile industry has become the classic example to refute the widespread impression that technological change displaces workers and causes unemployment without compensating expansion. *The truth however seems to lie deeper.* (Italics ours.) For, as Table 3 plainly shows,—total figures for employment in all manufacturing trades combined do not indicate such great expansion in labor requirements to the level concerning which these larger estimates for the automobile alone are given. Yet the period covered, from 1899 to 1937, was precisely the time of growth of the automobile industry. * * *

The assembly line, for instance, with its specialization of tasks and accelerated output, is but one illustration of an increase in production whereby actual volume of production increases faster than total employment. This alteration in the relation between volume of production and labor requirements, which results from increasing labor productivity, is the deeper truth concerning the influence of technology on employment. Change in labor productivity has a more lasting influence on livelihood than mere displacement from old jobs or expansion of new industries.

So much for Mr. Scoville's wild conclusion that the automobile industry alone is responsible, not only for the entire rise in manufacturing employment between 1899 and 1939, but also for almost a million jobs that hadn't yet been born in 1939. Tut, Tut! Mr. John (Paul Bunyan) Scoville, the booby man will get you, if you don't watch out!

Me and My Shadow

No, Mr. Automobile Worker, there is no getting away from the uncomfortable fact that you are a part of the most highly mechanized industry of the Power Age. No amount of economic imbecility is going to help you when the last and greatest depression of all settles down around you. No minority pressure group plans of your own can possibly solve your problem then. Your fate is tied

up with that of all other Americans.

Listen to what Gunnar Myrdal, famed Swedish economist, has to say about the prospects for the automobile industry in the postwar era. Technocracy holds no brief for any economist. It has correctly defined economics as the pathology of debt. But, there are economists and economists. Most of them are full of screwball theories. Once in a great while there is one who is more forthright and honest. Myrdal is of the latter type. He made a painstaking survey of the U. S. economy. The title of it is *Economic Developments and Prospects in America*. Being a foreigner, Myrdal has less to lose by speaking right up. He can afford to be more objective. Referring to the prospects for the automotive industry in the postwar era, he writes:

One striking fact constantly overlooked in popular discussion is that if motor car production should be expanded to eight million a year,—the motor car industry would, nevertheless, be forced to lay off several hundred thousand workers.

No one could say it better. The only way to produce more is to work less. If we want 8,000,000 new cars a year, we must resign ourselves to the fact that there can be only a slight rise (if any) in employment above the highest peacetime level. Employment in production for war cannot be used as a gauge to measure peacetime jobs. As soon as the war is over, the dogs will be turned loose in the automobile industry, to eat each

other. You must remember that your precarious existence under the Price System is precarious precisely because that's the nature of a Price System.

Unite, Operate and Prosper

You have done a splendid job in production for war. You have organized into strong unions for the purpose of getting immediate economic benefits. This was a normal defensive reaction to your environment. Nothing you have done so far as individuals, or as a group, can possibly solve your central social problem. How are you going to get abundance, distribution, security and equal opportunity for yourself and family within the decaying framework of a dying economic system?

Every gain that you make as a minority group is at the expense of some other minority or of society as a whole. Your group *must* constantly be at war, or ready to fight, lest some other minority group chisels into your preferential advantage. Every other minority group *must* behave the same way. That's the Price System for you. Every gain that you make in hourly wages will always be soon cancelled out by new mechanisms which still further reduce the man-hours per unit necessary. Consequently, total man-hours are reduced. This reduces total purchasing power. Before you know it, you're back where you started from. There is no peace, no security, no stability anywhere.

Technology is ruthless. No one is to blame. It's a process. It's a physi-

cal trend. It's the very core of civilization in the Power Age of North America. It is unidirectional and irreversible. There's nothing anybody can do to stop it short of destroying civilization. Your social problem is no longer an individual or a minority group problem. Before any man is an automobile worker, or even a union man, he is an American citizen. Your problem is now a collective problem, the same as that of every other American. We are all in the same boat now. Science and technology have made us one, for better or for worse.

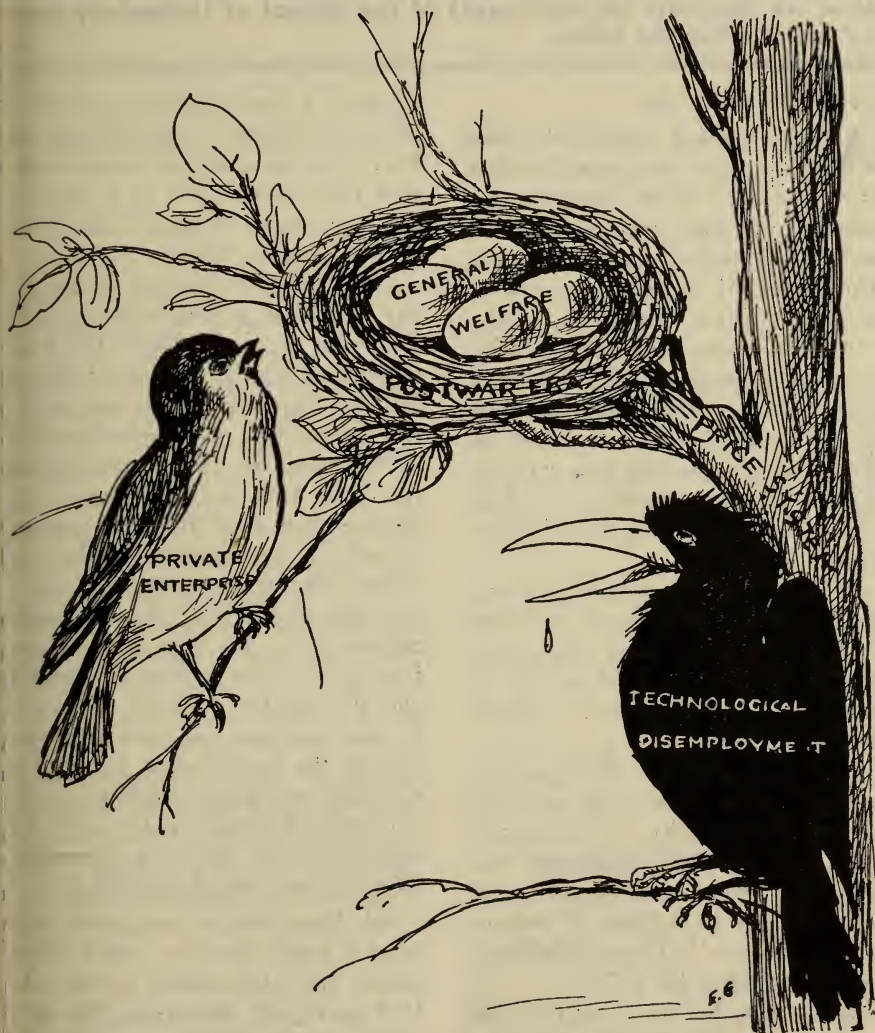
We can make it for the better. It will take all of us working together as a unit to do it. It is not enough to analyze the problem. You have to synthesize it also. You have to relate it to the great American social problem as a whole. Only thus can you correctly orient your own position. It is necessary to enlarge your field of social vision. Then your problem will fall into proper focus with others. The picture will clear up. The answer is there.

In union there is strength. The bigger and stronger the union (all other things being equal), the greater our strength. Let's think in the biggest possible terms. Let's think of all America as one operating unit, one functional organism. That's what it is, you know. It has the men, machines, materiel and resources to provide a very high standard of living to all its citizens, regardless of race, creed or color. Then all we have to do is apply technological methods to all America as a whole. What we put into it will come out as a great ad-

vance in the General Welfare. Can you think in such big terms, Mr. Automobile Worker? The dictum of technology is 'Unite, Operate and Prosper, or Suffer the Consequences.'

Have you got brains enough to comprehend, and courage enough to rise to the challenge?

Investigate Technocracy!



QUOTH THE RAVEN, "NEVER MORE."

Technology Marches On!

A Good Servant But a Poor Master
By Research Division 8741-1

Technology is the application of scientific principles, and physical laws, to industrial, agricultural, and social operations. The totality of these operations constitutes the North American social problem. Here, we illustrate various facets of the impact of technology upon our social structure today.

Agriculture and Food

A three-wheeled implement, operated by one man, now does flax binding work which formerly required a 5 man crew.' The new method was worked out by the U. S. Department of Agriculture. (*Farm Implement News*, August 31, 1944)

'A pea-pitching machine, described as a cross between a buck rake and a manure pitcher, eliminates the need for conveyors and does the work of 10 men in transporting peas into the Niagara Frontier Canning Co. plant at Newfane, N. Y.' (*The Food Packer*, August, 1944.)

'A machine built by spinach growers in Southern California will cut about 10 times as much spinach as its seven man crew could harvest by hand.' (*Food Industries*, August, 1944.)

'Three new machines developed for peanut farming have great potential labor-saving capacity. U. S. Department of Agriculture engineers estimate that these machines can cut harvest labor to 1/10th of present requirements.' (*Farm Implement News*, September 14, 1944.)

'A machine for removing the caps from strawberries is claimed to be

capable of removing the caps from 50 to 60 crates of strawberries an hour, whereas a woman worker averages only about $\frac{3}{4}$ ths of a crate in the same length of time.' (*The Food Packer*, August, 1944.)

The 2,000,000 tractors in use today on farms is double the number that were in use in 1929. The total number of corn picking machines in use has increased 29 percent in the last 3 years. One picker does the work of 10 men. In 1944 International Harvester built twice as many as in any previous year. The total number of milking machines in use has increased 50 percent in the last 3 years, each machine halving the man-hours necessary for this work. Output per farm worker has gone up 28 percent and the number of acres harvested by one man has increased 14.5 percent in the last 4 years. In 1909 it took 12.7 man-hours of labor to grow one acre of wheat; today only 3.3 man-hours of labor are needed. (*Wall Street Journal*, April 24, 1945.)

Ed. Note: So you are going back to the farm after the war? What farm? The total number of farms in U. S. is rapidly decreasing. The first returns in the 1945 census of agri-

culture shows that in the first 300 counties listed, the average size of farms has increased 10 percent since 1940. The number of farms in the 300 counties decreased from 499,376 to 488,449; while the acreage cultivated increased 8 percent. As farm technology advances, there will be less farms, less farm workers, more surpluses of food, more subsidies and more Price System muddling. (See *Power on the Farm*, in A-13, *Technocracy Magazine*, published August, 1938.)

Manufacture for War

'When the National Cash Register Company undertook to manufacture the magazine for the 20-mm Oerlikon anti-aircraft gun, production practice at first was based on previously tested methods. More efficient methods and changes in product design and specifications have resulted in conservation of men, materials, and machines, and better products.' The changes resulted in eliminating over 300 machines, in saving over 20 tons of metal per month on one operation alone, and in the elimination of over 124,000 man-hours of labor per month. As we figure it, this comes out to the displacement of about 15,000 eight-hour shifts of work. (Quotation and data from the *Tool Engineer*, as reprinted in *Metals and Alloys*, January 1944. (Ed. Note: See *Man-Hours and Distribution*, middle of page 10 to middle of page 11.)

Aviation

'By using an airplane to sow the seed, the Truax-Traer Coal Company

has planted 1200 acres of 'spoil banks' to pasture grass in 26 hours. Five men, including the pilot of the plane, were used in the planting which took place near Canton, Illinois.' With normal methods, one man can sow about one acre a day and costs are \$5 to \$6 an acre compared with \$3.20 by plane. (*Wall Street Journal*, April 9, 1945.) *Ed Note:* As we figure it, not only was there a money-saving of \$1.80 per acre sowed for a total of \$3,160 but 1044 man-days of labor were dispensed with. Ha! Maybe here is where the future of aviation lies. See: *Technocracy Study Course*, bottom of page 150.

Vulcanizing Rubber

High frequency induction curing of rubber is 17 times faster than the conventional steam method. The process will eliminate thousands of man-hours of labor. Vulcanization is the joining of sulphur and rubber molecules through the application of heat. When steam is used, the heat must soak in slowly from the outside. Electronic equipment heats the entire product almost instantaneously throughout. The process is in the production stage. It can be used for dozens of rubber items, such as, tank tracks, rollers on which the tracks operate, solid rubber wheels for tractors and cars, for curing foamed sponge rubber for mattresses, upholstery, seat cushions, for vulcanizing patches in tires, recapping old tires and in the manufacture of new tires. (*Chicago Sun*, March 8, 1945.) *Ed. Note:* See *Technocracy Study*

Course, bottom half page 116 and top half page 117.

Conserving Resources

A chemical process has been developed for converting scrap aluminum into commercially pure aluminum. The process separates the aluminum from other metals and from the alloying material in the aluminum itself. The method dissolves the aluminum but does not affect alloying materials, steel nuts and bolts, copper piping, bronze bushings, rubber or other non-aluminum parts. The process makes possible the conservation of high-grade bauxite reserves and will eliminate most of the man-hours required to mine bauxite. (Data from *Business Week*, May 12, 1945.) *Ed. Note:* See Minerals and Living, in A-14 *Technocracy Magazine*, published October 1938.

Shade of Samuel Gompers

Shorter hours of work has always been an integral part of Labor's demands. Now, however, in many instances a shorter work day is not wanted. In the middle of May, 200 employees of the Bloomfield, Pennsylvania, plant of the American Smelting and Refining Company went on strike because the work week was reduced from 48 to 40 hours. The reduction in hours reduced take-home pay more than 20 percent. (Data from *Business Week*, May 26, 1945.) *Ed. Note:* See *Technocracy in Plain Terms*, bottom of page 15 and page 16.

Interest Rates

The Institute of Life Insurance re-

ports that real estate holdings of American life insurance companies at the end of 1944 reached the lowest level in relation to total assets since 1930. Real estate sales by insurance companies have continued in large volume since the first of this year. (*Wall Street Journal*, March 29, 1945.)

The net rate of interest earned in 1944 by the life insurance companies of the U. S. hit a new all-time low of 3.19 percent as compared with 3.29 percent in 1943, reports the Institute of Life Insurance. Government securities of all types last year accounted for 45 percent of total life insurance assets as against 40 percent in 1943 and about 25 percent in 1941. Real estate mortgage holdings accounted for 16 percent of total assets last year as compared with 20 percent in 1941. The Institute pointed out that about 80 percent of all corporate financing during the year (1944) was for refunding purposes to take advantage of lower interest rates. The Institute added that the interest rate has tended downward for more than 20 years, and that this long-term decline has been largely responsible for the increase in policy costs over the past 15 years. (*Chicago Sun*, June 20, 1945.) *Ed. Note:* See *Twilight of Insurance*, *The Technocrat*, May 1940.

Postwar Plan

'Detroiters were warned today to "keep their shirts on" between 9 A.M. and 3 P.M. Sunday.

'Armed men and armored vehicle will be maneuvering in the streets in

many parts of the city. But there will be no reason for alarm. It will merely be the Detroit Police, the Michigan State Troops and the 728th Military Police battalion practicing.

'The three agencies have worked out on paper, ways of working together in event of a major disorder. Sunday they propose to test out the

paper plans on the street, under conditions of simulated disorder.

'Heads of all three agencies are anxious that citizens realize it is just practice.' (*Detroit News*, May 19, 1945.) *Ed. Note:* See *Introduction to Technocracy*, middle of page 25 and top of page 26.

ALL THE SAME ENERGY

Prof. J. D. Ryder of Iowa State College in an address before the Midwest Power Conference at the Palmer House, Chicago, April 14, 1944, defined *electronics* as

'that branch of science which treats of the functions of electrical energy as it travels through a vacuum as in X-Ray or radio tubes or through gas, as in neon lights.'

His definition drew a line between *electronics* and *electricity*, since electricity

'treats of energy passing through a solid, such as copper wire, or a liquid, as in electroplating.'

Prof. Ryder further pointed out that despite the fact that electronics 'is a branch of science,' there are only three reasons why electronics will be manufactured and sold (*Ed. note:* Under the Price System, of course), (a) if they do something no other device can do, such as smoke recording; (b) if they do something better than any other system, such as temperature recording; and (c) if they are cheaper than any other system.

(*Chicago Daily News*, April 14, 1944).

According to the General Motors Research Laboratory, the energy in a gallon of gasoline used in an automobile is expended in the following manner:

- 40 percent in heating the cooling water
- 20 percent in incompletely burned fuel
- 20 percent as heat in gas
- 10 percent in engine friction losses
- 2 percent in transmission friction
- 8 percent in useful work

'What you think about depends on what you eat and not on the books you read,' declared Dr. T. C. Barnes of the Hahnemann Medical College, Philadelphia, recently before the American Association for the Advancement of Science. Brain waves, the rhythmic electrical pulsations that can be measured by sufficiently delicate detecting instruments through skin and scalp, are greatly influenced by the concentration of sugar in the blood, Dr. Barnes found. These waves, he explained, are produced by a complex chemical known as acetylcholine, which requires sugar and carbon dioxide for its build-up.'

(*Science Digest*, November 1944)

There is an old axiom to the effect that quantitative changes, if pressed far enough, become, in time, qualitative changes. Thus, if you heat cool water one degree, it is still water; heat it yet another degree, and it remains water. But, in time, you reach 212 degrees Fahrenheit. When that point has been attained, the application of just one more degree of heat, in no way different from what has gone before, gives you a material entirely new and different; not water, steam.

We leave it to our readers to find the connection between the above and America's social problems today.

There were 214,000,000 wheels in use in the U. S. A. on January 26, 1945. (Research Division 8741-1.)

In the Question Box

By Public Speakers Division 8741-1

Who supplies Technocracy Speakers or Organizers with money and cars?

B. R. T.

They supply themselves with money and cars. Technocracy Inc. does not pay any salaries, commissions, bonuses, royalties or pecuniary compensation of any kind to Authorized Speakers and Organizers. Practically every member of Technocracy, except those who are retired, hold down some kind of a job in the Price System. After the demands of the system have been met, the members put in their spare time functioning for Technocracy on a voluntary, non-paid basis. When Speakers or Organizers go on a Tour, the various Sections visited pay traveling and hotel expenses. That's all they get out of it. Since gas rationing went in, there have been no tours by car. If a member has a car, he may use it in his home town, but that's all.

Are the chiseling practices of the Price System now being practiced in Soviet Russia?

E. N. T.

We are not really as well posted on the opportunities for chiseling in the Soviet Union (if any) as we would like to be. However, judging from the differences between Russia's economy and ours, we would say that the opportunities to practice chiseling are decidedly slim there. You must re-

member that there is no such thing as private enterprise in Russia. Of course, it's a Price System economy. However, instead of private enterprise they have state enterprise. The political Government owns and operates everything. The greatest amount of chiseling in any economy is connected with buying, selling and exchanging goods for a profit. That type of chiseling is out in Russia because the government exercises monopoly on buying, selling and exchanging goods for a profit. There is such a thing as political chiseling. We wouldn't be surprised if Russia is cursed with a due share of that. It seems to be a part of the political method of determining social decisions. Only a technological control can free any economy from business political and social chiseling.

Might not abolishing the right of minorities to influence the government end the rights of minorities in every direction? Is this not fascism?

H. B. D.

It's strange that you should worry about the 'rights' of minorities instead of the 'rights' of the general welfare of all. Don't you realize that fascism is the imposition of the 'rights' of a selected few minority groups upon the mass of the people? Don't you realize that any act of a government whose end product is

increase the 'rights' of a minority pressure group is a pro-fascist act? We are not concerned here about cultural, religious or philosophical 'rights' peculiar to any racial or national minority. They can hang onto them until the cows come home. What we are concerned with is the so-called 'right' of any minority pressure group to chisel a preferential advantage for itself at the expense of the majority and the welfare of all. Americanism means majority rule, not minority rule. Let's worry more about the 'rights' of the 98 percent who always pay through the nose under a Price System and less about the 'rights' of the 2 percent. They are taking good care of their own rights.' That's just the trouble. Right?

Technocracy seems to be ideal, but how can it work, and will it?

R. H. K.

How does a steam engine work, an internal combustion engine, a hydraulic pump, an electrical circuit, a radio, an airplane, a street car, a telephone, or anything else familiar to our industrial civilization? The answer is that these things work in obedience to physical principles. Are you certain that the Sun will rise tomorrow and having risen that it will set again? Are you certain that the tides will continue to rise and fall in obedience to the gravitational pull of the moon? Are you certain that

Halley's Comet will return once every 75 years? Are you certain that the four seasons of the year will carry on their orderly progression? Yes, as certain as the weight of scientific probability can make anything certain. That's how certain it is that Technocracy will work. Technocracy is a scientific design of social operations involving the application of physical principles to our entire economy. It will work all right. The problem is how to get Americans to work for Technocracy. What are you doing about it?

How can the Total Conscription plan of Technocracy be enforced in North America without the elimination of our present day government?

C. R. M.

Total Conscription could not possibly be enforced in North America except by our present day government. Anything else would be fascism. The elimination of the present day government is the very last thing desired by Total Conscription. If you will read the program, you will see that it is to be installed by the government, not Technocracy. The program carries its own time limitation in it. Thus, the government installs it and when the time is up, discontinues it. The trouble with us is we're so conditioned to being cheated and hoodwinked by the Price System that we can't recognize a straightforward proposition when it is put up to us.

The first man to kindle a fire made the earliest known application of physical principles to human needs.

We wonder what happens in a court of law when a positive identification runs smack up against a perfect alibi.

Each in His Own Tongue

By Publications Division 8741-1

VOICE OF THE PRICE SYSTEM

Stereotyped form letters won't give a Senator courage, or information, or insight—or even the willies. But 1,000 individual letters, written from information provided by the N. A. C., can head in, smoke out, or buck up any man who votes on Capitol Hill.

From instructions to business men in the handbook of the National Affairs Committee organized by the Chamber of Commerce of the U. S. to enlist individual business men in a campaign to bring pressure to bear upon Congress. (As quoted in the *Wall Street Journal*, May 11, 1945.)

If widespread unemployment occurs after the war, people will demand that something be done by the government—which may be contrary to the spirit of free enterprise.

William Muirhead, president of the Associated General Contractors of America. (As quoted in *The Economist*, November 25, 1944.)

The public generally looks at war products as possessing a salvage value. They feel the same way about the surplus plants. The excess of aircraft and plants which constitutes

practically all our surplus must be considered just as expendable as the shells that hurtled across the Rhine or as the rockets that zoomed into Iwo Jima and Okinawa.

Eugene E. Wilson, president of the Aeronautical Chamber of Commerce in an address before the Chicago Forum on Aviation. (As reported in the *Wall Street Journal*, May 10, 1945.)

At the hands of the state security and serfdom are ultimately and inevitably identical as economic facts, and the political forms in which they are dressed

up are unimportant.

Virgil Jordan, president of the National Industrial Conference Board in an address before the Chicago Association of Commerce, April 1, 1945. (As reported by the *Chicago Sun*, April 19, 1945.)

If on official trips, you put bay rum on your expense account, then put it on your hair. Otherwise it is petty graft and you will qualify as a petty grafter. No senatorial graft ought ever to be petty. That is, not too petty. Advice given by Senator Alben Barkley (Dem. Ky.) to new senators

at the National Press Club semi-annual new senators' party. (As reported by Bascom N. Timmons in the *Chicago Sun*, April 9, 1945.)

Not only do I think there is no good reason to publish any of the salaries or profit sharing except the largest, but also I think such publication may do, and actually has done, great harm; this is especially true when large companies and the officers are located in small communities where people all know each other.

Gerard Swope, former President of the General Electric Company, in an

article in the spring issue of the *Harvard Business Review*. (As reported in the *Wall Street Journal*, April 8, 1945.)

All the good in the world today is being threatened by the masses. No government should give the people a choice between good and evil. When the people turn into a mass . . . the majority invariably choose evil instead of good.

Monsignor Fulton J. Sheen, in a Lenten sermon in St. Patrick's cathedral in New York, March 18, 1945. (As quoted by the *New York Times*, March 19, 1945.)

VOICE OF TECHNOLOGY

One time a big manufacturer looked at one of our gadgets and practically swooned. "Good Lord, man, we can't put *that* on the market." I said, "Why not? Isn't it any good?" He said, "That's the trouble. It's *too* good. If that thing got out, it would ruin a whole industry. We couldn't compete against it."

Maybe that's good industrial economy, but it's not for poor old Bingle. Seems to me if a thing is that good, John Q. and his missus are entitled to have it. If it ruins a whole industry, why it ruins a whole industry—and builds a better one. That's just one case; we've had others. Generally speaking, we have

found manufacturers afraid to tackle new things.

Bing Crosby, in his article 'I Got Plenty of Mousetraps,' describing the Crosby Research Foundation for inventors, in the *American Magazine*, July, 1945. (Italic's Bing's.)

America's productive capacity has been increased to almost unbelievable proportions during the war. The domestic market will be unable to absorb the present output after hostilities cease, except for the relatively brief period when depleted inventories are being replenished. Export outlets will be the only alternative to a sharp decrease in our postwar output, with its concomitant unemployment, re-

duced purchasing power, deflation — and, inevitably, depression.

Extract from a pamphlet put out by the Chicago Association of Commerce. (As quoted by Edwin A. Lahey in the *Chicago Daily News*, Jan. 7, 1945.)

In the past, America's mastery of mass production methods has been a great asset in competition for world markets. This American technique often has enabled us to offset the much lower wage levels of other parts of the world.

It seems reasonable to assume that in the post-war era America will not enjoy such a wide margin of advantage over other nations in the matter of production know-how as was the case in pre-war days. The vast increase in the tempo of mechanized production, brought about by the war, has not been experienced by America alone. Russia and the British Empire are notable among other nations which have adopted the faster pace. And we have been unstinting not only in supplying finished goods to these Allies but also in supplying productive machinery and full knowledge of our methods.

P. W. Litchfield, chairman of the Board of the Goodyear Tire and Rubber Company, in *The Goodyear News*, April, 1945.

With the water table falling over so great a part of the

United States and with soil erosion but little checked, there is a note of tragic absurdity in the grandiose talk of the coming economy of plenty. Unless tall talk and blueprints handed down from on high are replaced by actual work of practical conservation, this country will be headed in a few decades toward a desert economy rather than toward a more abundant life.

Extract from an editorial in the *Chicago Daily News*, August 3, 1944.

It is not unfair to say that the American people, except for a few million, are guilty of the crime of indifference in the face of race prejudice, economic exploitation, political corruption and the degradation of oppressed minorities.

Robert M. Hutchins, president of the University of Chicago, in an address to graduates of the University, June 15, 1945. (As reported in the *Chicago Times*, of the same date.)

The basis of the scientific process is the reproducible experiment. It is the only fundamental tool at our command for extending our knowledge of the universe. It is the accepted scientific method, and when applied to obtain a better understanding of our environment, it is called "scientific research." Even logic is secondary in importance to the reproducible experiment. Mathematics is the only branch of science which

has passed from the realm of the experimental to the utopia of pure logic.

Thomas Midgley, Jr., former president of the American Chemical So-

ciety. (As quoted in a Summary on The Future of Industrial Research by Frank A. Howard, president, Standard Oil Development Company.)

WASTE NOT, PROFIT NOT

More Americans have lost their lives by fires since 1900 than have been killed in all the wars fought by the United States. Since the turn of the century 425,000 persons have been trampled, suffocated and burned to death in this country.—National Fire Protection Association.

Property loss by fires in U. S. is now running over \$800 a minute for a total of over \$1,000,000 every day. Data and statement by Elmer F. Riske, manager of the Cook County inspection bureau, before the engineering division of the Greater Chicago Safety Council. (As reported in the *Chicago Times*, April 21, 1945.)

In the first 90 days of 1945 there were more than 96 fires a day in the City of Chicago, or a total for the period of 8,666 fires. (Chief Fire Marshal Anthony J. Sullivan in the *Chicago Times*, April 4, 1945.)

'The real wealth of a country consists of the factories and the machinery, the farms and the mines, which makes possible the production of useful things. It also includes the railroads, the street cars, and the light and power equipment.'—Exact from editorial in *Chicago Tribune*, December 12, 1944.

WASTED PATENTS DEPT.

A total of 9,000 tons of high quality alloy

steel was used last year in making 3,500,000,000 razor blades. This amounted to nearly ten million blades per day, allowing every adult American male about one new blade every three days. That these 9,000 tons of alloy steel could have been used to better purpose in the war effort cannot be denied. But would that necessarily force American civilian and uniformed men to grow beards? Not when the same tonnage of steel, by a simple change in the metallurgical formula, can be made to turn out blades that would last the male population for years!

About the best the Price System has to offer is the 'Swedish stainless steel' advertised by a Chicago department store. They 'give you 15 to 30 smooth shaves per blade—at \$1 a dozen,' or other more expensive blades with not much more life.

However, in the December 1944 issue of *McCall's* magazine, is the following scoop: 'Coming soon—add to your list of post-war products: a razor blade that needs to be sharpened only once in five years.'

You can be sure that any such blade will never be widely marketed under the Price System, nor would the blade with tungsten-carbide edge described by Technocracy over a decade ago (at an energy cost of only 20 percent more than the ordinary blade; it would last 20 years). For the reasons why not, see the dividend statements of manufacturers of the 3-shave blades, as well as the particularly interesting discussion of this problem in the official *Technocracy Study Course*, where it is given as an example of Price System wastefulness of non-replaceable resources. (Research Division 8741-1).

STRAIGHT AS THE CROW FLIES

Of all the notable things on earth
The queerest is the pride in WORTH
In this American nation.

He's WORTH a million, is the cry
So emulate this WORTHY guy,
Chisel and cheat and bribe . . . and lie—
Then form a corporation.

Take warning now, my grasping friend,
The ladder of WORTH you can't ascend
Without good reason to apprehend
That you'll find it greased near the top—
most end
With excess profits' taxation.

That furthermore, your frenzied climb
Toward social heights, and WORTH sub-
lime
Will end . . . by simple calculation
In Government expropriation.

Herb Robbins

TAKE IT EASY

'When the stress and strain of our war is over and the great inevitable economic depression follows, leaving in its wake victims of financial reverses, high taxes, etc., the resources of the nervous systems of our people will be fatigued to the utmost, the sequel of which will be insomnia and emotional instability, relief of which will be sought from the family physician. If the physician does prescribe some form of barbiturate, we shall subsequently see a rise in mortality and morbidity due to their increased use.'—Dr. William D. McNally of the Cook County, Illinois, Coroner's Office, as reported in *P.M.* January 5, 1945.

Some Technocracy section addresses in Great Lakes area

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8040-2—Box 356, Ambridge, Pa.
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TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association other than North America or elsewhere.

★ The basic unit of Technocracy is the Charterred Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local section.

★ Members wear the chromium and verdigris insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Masters Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

Great Lakes Technocrat,
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Chicago 14, Illinois

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"When we begin to feel the order of nature in our very bones, then only will we respect it and proceed to shape our institutions, our lives, and the lives of our children in harmony with it."

Paul B. Sears, Professor of Botany at Oberlin
College in the *New Republic*, June 11, 1945.

GREAT LAKES TECHNOCRAT

25c

Volume III

Number 6

25c

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GREAT LAKES TECHNOCRAT

SEPTEMBER-OCTOBER, 1945 ★ VOL. III ★ NO. 6 ★ WHOLE NO. 7

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TECHNOCRACY DIGEST

625 W. Pender Street

Vancouver, B. C., Canada

From the Camera's Eyevuew

The Old Civilization vs The New

What Price Opinion?

[F you ask the average man to point out the difference between mankind's way of living 7000 years ago and today he is likely to snort: 'They weren't civilized 7000 years ago.' If you ask him what he means by civilized he's almost sure to say: 'Any "dope" knows that.' If you demand a better definition he'll refer you to the dictionary. That ends it as far as he is concerned.

Nevertheless, dictionary definitions are, like all other definitions, simply arbitrary agreements among men. They often serve to conceal lack of understanding by offering verbal substitutes for other terms. Webster tells us that to 'civilize' means to 'reclaim from savagery; educate; refine; humanize.' Civilization is defined as the 'relative advancement of culture' in respect to these ideas. By a little digging beneath the surface we find that all this means precisely nothing, since there are no absolute standards of education, refinement or humanity, as yet.

So we begin our quest for the difference between mankind's way of living 7000 years ago and today from the happy hunting grounds of opinion, where one man's ideas can grow as tall as another's and there is room for all. However, if we stay in these lush fields we'll never get anywhere with our query. The climate of opinion is too agreeable to the ego. So, let's venture forth to the dry land of facts. Precise knowledge, like the shamrock of Ireland, grows nowhere else.

Civilization is not a collection of sentiments or an ideology. It's a way of living. Basically, it is the means whereby men get their living from their environment; plus the institutions which have developed to regulate their co-habitation. This definition is not a verbal substitute for another word but an explanation in terms of physical and social meaning. It is also a fact, since it is the close agreement of a series of observations of the same phenomenon. Anyone who cares to make a study can check up on it.

7000 Years Ago and Today

From remote antiquity down to about 200 years ago the means whereby men got their living from their environment changed but little. The chief source of power available with which to do work was the human body. Consequently, no more could be produced than was possible with the total energy of the working population. The domestication of plants and animals extended man's control over his environment. But, by and large, that control was meager for thousands of years. It was a hand to mouth existence for the great majority; with special privileges for the favored few. Civilization became stabilized at a low order of magnitude of operations, in a state of ever present natural scarcity. This socially static state endured until the 18th Century. During this long period the institutions developed to regulate society became fixed and frozen in folklore and tradition.

To be sure there were changes in political states, in philosophic and moral concepts and in titles to the means of production, from time to time. But these changes were superficial involving only changes in systems of thought and not in the fundamental means whereby men lived. The order of magnitude of operations remained the same. Whether mankind made any progress in education, refinement or humanity during the Age of Scarcity is a moot question.

Science and its stalwart son technology are reshaping civilization. They are literally creating a new culture within the shell of the old. The old civilization of toil and scarcity is passing away before our very eyes. With it will go all the value prestige and phony orchids of culture that sprang from its dung heaps of scarcity. The new culture of the Power Age is coming in, impelled by the resistless processes of technology. With it will come abundance and equal opportunity for all. Then technology will be released from the control of Price System interference and obscurantism. It will be set free to perform its prodigies in that 'new world acoming.' And its greatest prodigy of all will be the inevitable demonstration that freedom of technology is the foundation of all other freedoms.



Photo: Courtesy Air Transport Ass

How far is an hour, in distance? As far as available transportation technology permits. How far is a scientific idea, in progression? As far as collective social consciousness recognizes the trend of progress brought on by the impact of physical laws. This 200 m.p.h. plane typifies the Power Age which demands scientific operation. The horse and buggy typifies all of yesterday's 7000 years.



Photo: Courtesy Anheuser Busch

Opinions (philosophy) or measurement (facts)? That is the great question of this age. When granddaddy was in his prime, the age of opinion was in flower. All America enjoyed a free ride on the expanding curve of technology for about 150 years. We came to think our opinions had something to do with it. That delusion will soon be rectified. Today's problems won't yield to debates around a pebbled stove in a general store. Look back at the past in this picture; it's gone for good.

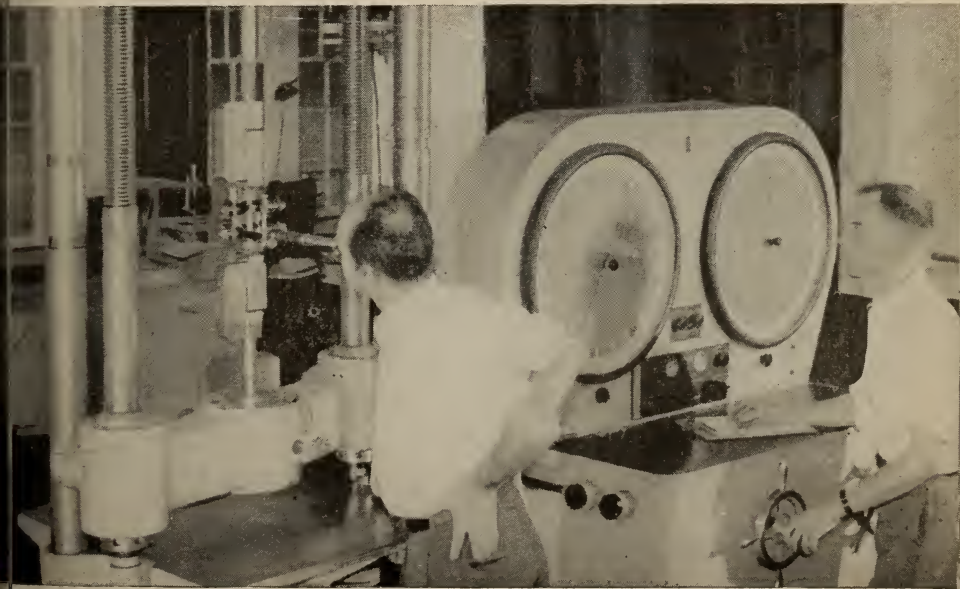


Photo: Courtesy The American Brass Company

Here is a splendid example of measurement, the Extensometer. Tensile strength, elongation, yield strength and other data of copper alloys are determined by this precision tension testing machine. Note the scientist's attitudes. There's no guesswork or opinions here. Facts dictate. It's just about time this attitude was carried over into the field of social problems. Their complexity and magnitude today invalidate opinions and philosophy, and demands the scientific approach.

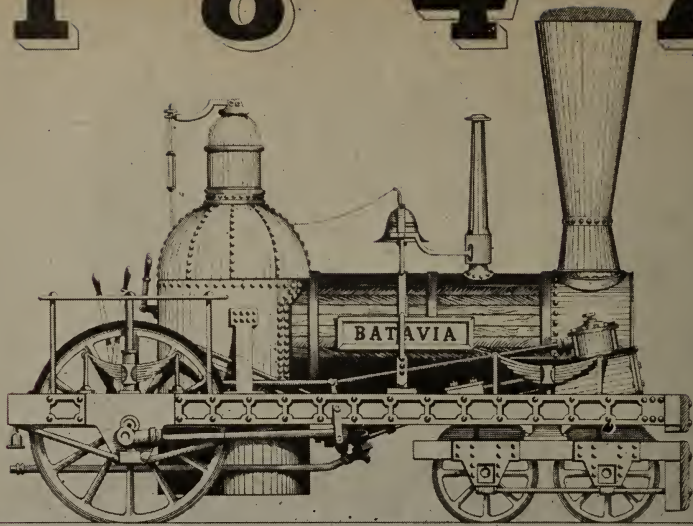


Photo: Courtesy N. Y. Central S

One of the first locomotives built in America. It was completed in 1838 by the Rogers Locomotive Machine Works, Paterson, N. J., for the Tonawanda Railroad. The form of firebox shown here, semicircular at the rear part with a hemispherical top surmounted by a dome, was used as late as 1857. The Batavia was typical of early railroad technology. It was good enough for grandpappy's time. Today it would even be capable of switching freight cars around a small town siding. Good old Batavia.



Photo: Courtesy The Pennsylvania R.R.

Here's the latest in railroad technology, two way electronic train telephones, not straight radio. It lets you talk at will between locomotive and caboose, between trains miles apart and with distant operators. The carrier current system is used. The current jumps the distance from rails or wire to receiver it is intended for. Others are not affected. It was installed recently on a branch of the Pennsylvania R.R. Technology deflates the factors of human error and ego. Hurrah!



Photo: Courtesy Anheuser-Busch

the Missouri by steamboat to Independence, then over the Oregon Trail by oxcart and covered wagon. Traders followed the Platte River to Fort Laramie; through the South Pass and along the Sweetwater to the Snake River; then via Fort Hall along the Snake River to Whitman Mission; and down the mighty Columbia by raft to the valley of the Willamette. Four months of plying across half a Continent.



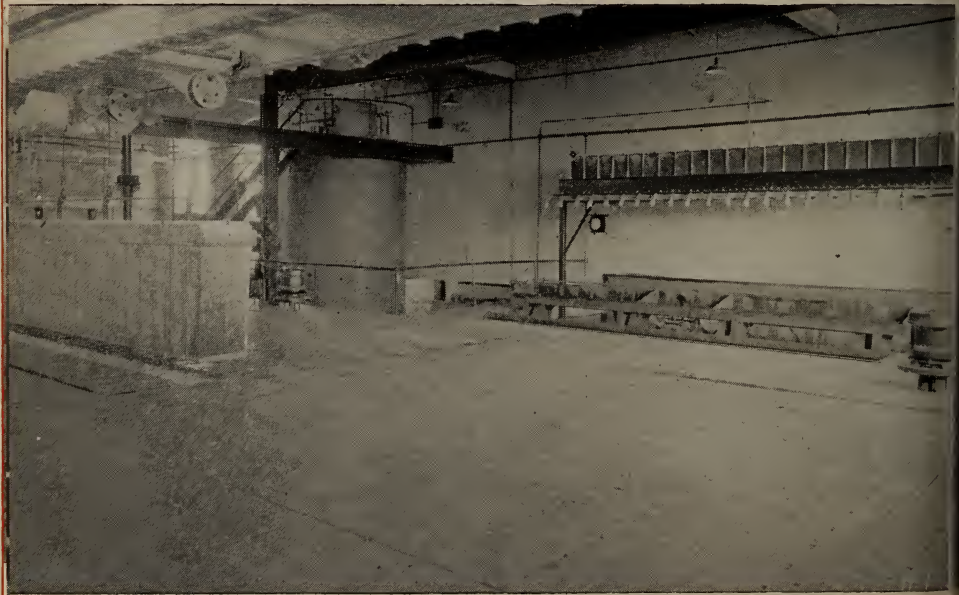
Official U. S. Navy Photograph

are still living who made that laborious journey. Now we can make the same trip in a handful of hours. Here is air freight in the making, the FBI Flight Ship, Conestoga. It serves as an ambulance or fighter. These two pictures typify the speed of America's progression, and the distance covered, from the oxcart age to the Power Age. It was done in the span of one long lifetime.



Photo: Courtesy Houdaille-Hershey Corporation

The ice harvest of yesterday was characterized by human toil and hand tools. In 1943, 11,000,000 Americans used 9,000,000 tons of ice. Industry used 31,000,000 tons. The old method is inadequate today. The first ice making plant was built in New Orleans in 1868. In 1942 the industry employed a peak of 50,000 workers. It used energy equivalent to 1,380,000,000 workers, or 138,000,000 horsepower. Payrolls represented 48.28 percent of all operating costs; power supplies only 10.4 percent.



Courtesy of York Ice Machinery Corporation, York, Pa.

The ice harvest of today goes on all the year around. America's 6,500 ice plants have a daily capacity 98,000 tons of ice. Operating at less than 40 percent of capacity in 1943 they produced 40,000,000 tons of ice. Some items used are: over 70,000 motor trucks and cars; 83,000 electric motors; 12,000 ammonia compressors; 360,000,000 pounds of salt and calcium; 15,000,000 pounds of ammonia; 21,000 miles of pipe, and total installed horsepower of primary and secondary movers is over 1,000,000.



U. S. D. A. Photo

Carry me back to—what? Human toil and hand tools? Here the hands are the tools. Cotton is the largest employer of agricultural labor. Up until recently King Cotton has defied mechanization. Cotton picking is the greatest single source of women and child labor in America. There are about 9 million people in the 2 million tenant families of the 10 cotton states. Their lot is largely spent in raising and picking cotton. It's a tough life, but technology is making it easier. Oh Happy Day!



Photo: Courtesy International Harvester Company

This mechanical cotton picker will pick as much cotton in one day as 70 men. At present wages rates costs about \$30.00 to pick a 500 lb. bale of cotton. This machine cuts that cost to about \$1.00 a bale. Figuring overhead, amortization, depreciation and downgrading caused by dirty cotton the saving is at least \$20.00 a bale. 'Weep no more my lady—' You will soon be released from the bondage of toil and scarcity. Politics can't do it; but technology is making it a categorical imperative.



Photo: Courtesy Bethlehem Steel

Remember the Village Blacksmith? That was in the 'good old days' of human toil and scarcity. Not scarcity isn't still with us, but the toil is disappearing fast, and some day soon we are going to run on scarcity. Here's a giant press forging a heavy slab of battleship armor. What power and technology! the men hard at work watching the press work. That's the proper spirit.



Official Photo U. S. Air

The type of social progression we have been illustrating is unknown in China. There they still operate did their honorable ancestors thousands of years ago. Human toil and hand tools are the only method the oriental has available; consequently he has scarcity. Here they reduce stones to a useable size with hand hammers, in building a B-29 base. Not much skill needed here, it's true; but what a lot of man-hand and low scale of production. You can't produce abundance with scarcity methods.



Signal Corps Photo

plexed no more with human or divine, Tomorrow's tangle to the winds resign.' Thus opined Omar Khayyam, the astronomer-poet of Persia, over 800 years ago. Nothing much has changed in that country since then. It is still a land of human toil and hand tools, plus plenty of opinions. Here, laborers of the Persian Gulf Command, U. S. Army, unload American flour on its way to Russia under lend-lease. U. S. Army operated the Iranian R.R. between the Persian gulf and Soviet supply depots in the North.



Kansas City Star Photo

Automatic lift unloading new wheat into bins. The loading car is tilted to a 45 degree angle and wheat pours out. The operation takes about a fourth of the time required by the old method. U.S. shipped food to American fighting forces and their allies in 56 theaters of war. In 1943 we re 50 percent more food on 2 percent less acreage with 10 percent less farm labor than in 1918.

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From the Camera's Eyevue

The Achilles' Heel of Technology

The Weakest Link Is The Strongest

Achilles was an ancient Greek hero whose exploits in war were written up by Homer, about 900 B.C. He was reputed to be physically invulnerable except in one place. According to the story, his mother had dipped him, while an infant, into the River Styx. This immersion rendered him invulnerable except in the heel by which she had held him. After many adventures, Achilles was killed, at last, by a wound in the right heel.

This story is a part of elegant literature, a myth. But it has a point worth considering. There is a similarity of a sort between the invulnerability and weakness of Achilles and the invulnerability and weakness of modern technology in America. In most respects, technology seems 'invulnerable' but it is utterly dependent upon a slender thread of precise adjustment and control. Technology is tenuous.

Electric power comes in over a thin wire. Shut off that flow and you convert the finest industrial plant in the country into a pile of junk, fit only as a nesting place for birds and rats. Stop the flow of power to our big cities and they become smoldering morgues for millions of people in a few days. Drop a few dozen blockbuster bombs in the railroad yards at Chicago, Kansas City, and a few other points and you disrupt a Continental transportation system. Manufacture, transportation, communication and agriculture are basic in America's technological structure. Unless they function smoothly, social welfare and public health decline toward zero and education is a useless pretense. First things always come first.

The greater technology becomes under the Price System, the easier it is to destroy. This paradox is a result of the clumsy interweaving of some physical laws with the Price System of trade and commerce and the exclusion of many more important ones because their adoption would invalidate the entire status quo.

What Color Is A Chameleon?

Industrially, technology is the application of physical laws to the production and distribution of goods and services. Socially, it is adaptation of the social structure to the verities of the physical world in which we live, and obedience thereto. The Price System is the devious, opportunistic methods of the institutions of business, finance and politics, while its social structure is the reflection of a hodge-podge industrial system that grew up out of mercenary instincts developed to a pathological degree by long ages of scarcity. Technology and the Price System are incompatible in the nature of things. Here is the focal point of social instability in the Price System and the source of technology's weakness today.

The average American is interested mainly in how much he can chisel out of society and how little he can get away with giving back in return. There is scarcely any social morale in this land, except in the Armed Forces, which is not interpreted in terms of personal gain. Our mixed-up culture of technology and chiseling Price System methods has reached a point of development wherein its operation and safety is dependent upon an ever-increasing number of physical factors. As social instability grows and social morale sinks lower, technology becomes ever more tenuous.

The Achilles' heel of technology is social violence. It must be strictly tabooed. Should internal strife occur, it will result in a major social catastrophe. There must be no reduction of America's great technology. Any party or group advocating social violence as a solution of America's problems is guilty of Continental treason. Amidst all the organized confusion in America today there is only one program that will make social violence unprofitable for any party or group; that will provide individual security through collective security; that will heighten social morale through a common objective; that will thus free technology from its tenuousness and guarantee the greater future of America. That program is **TECHNOCRACY'S VICTORY PROGRAM OF TOTAL CONSCRIPTION OF MEN, MACHINES, MATERIEL AND MONEY, WITH NATIONAL SERVICE FROM ALL AND PROFITS TO NONE.**



World Wide

Laying a pipe line to carry the oil of Iraq to ports on the Mediterranean. The source of power here is human labor. There are about 24 men at work on this job, totalling a little more than horsepower of energy. Notice the small pipe, the shallow trench, the hand tools and the obvious human toil. The low order of magnitude of operations shown here is normal to most of the world side America. The problems involved here can be solved with a 'Heave Ho!' and a couple of grunts.

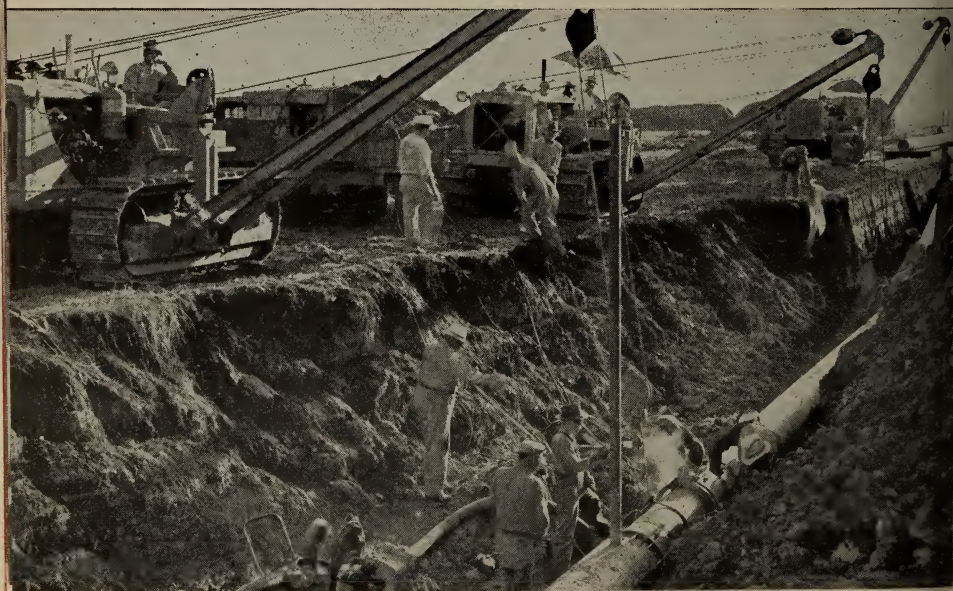


Photo: Courtesy Caterpillar Tractor

In this scene there are only half as many men but a lot of machinery. The prime movers shown here are hundreds of horsepower of energy. The ditch is wider and deeper than in the first picture; and the tractor is twice as large. Notice the tractor driver taking it easy and the general absence of human toil. This is a dynamic scene depicting a high order of magnitude of operations; power, speed, efficiency. Problems here can only be solved by following the design of the job and the mechanisms employed.

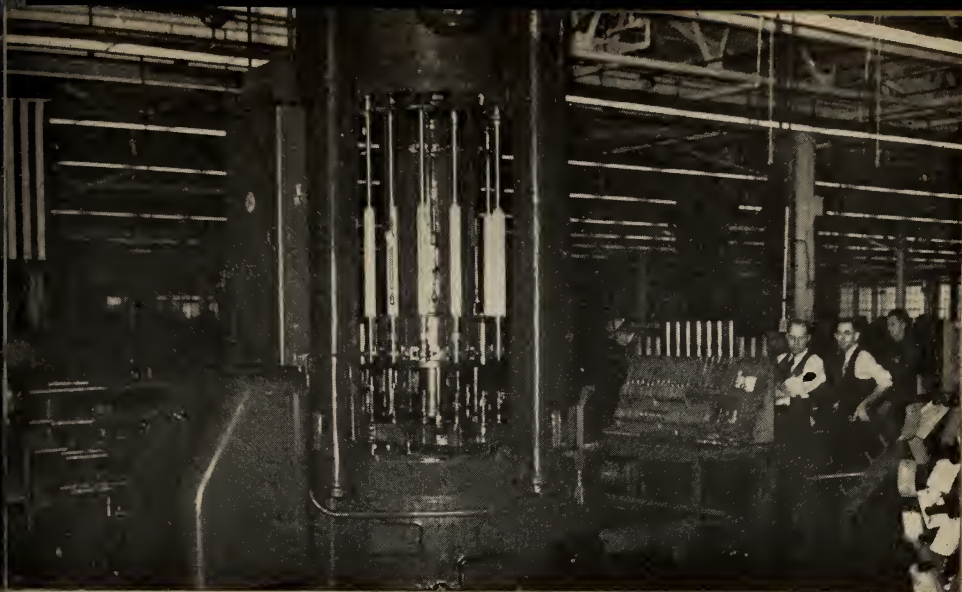


Photo: Courtesy General Motors Corporation

This 14 spindle vertical machine designed for chambering barrels on 20 mm anti-aircraft guns replaces 14 screw machines formerly used. It reduces machining time from one and one-quarter hours to four minutes. A great deal of training, knowledge of physical laws and industrial processes has gone into the design of this assembly. It displaces the skill of 10 operators and produces 19 times as much finished work. It is a complex, efficient machine, yet it is easy to destroy.



Photo: Courtesy Monsanto Chemical Company

If you got the idea in the first picture you will be able to see how it is carried further here. This is the control room in the dehydrogenation unit at the Texas City, Texas styrene plant. Styrene is one of the raw materials essential to making Buna-S synthetic rubber. On this panel remote from the actual operations, the most minute variations in the flow line are recorded and adjustments made. Complex skills are reduced to a matter of automatic recording and simple adjustment, by precise control.



Photo: Courtesy General Motor Corporation

This huge multiple tool drills hundreds of holes simultaneously in the heavy armor plate of war to transmissions. Absolute precision prevails here. Every hole **MUST** be in the right place. It's amazing how quickly these hundreds of holes are drilled, once the job is all set to go. Think, how long and arduous this task would be if each hole had to be drilled separately, by hand. Operations like this can't be done by guess and by gosh. They must conform to the technological principles involved.



Photo: Courtesy General Electric Company

Here is the assembly line at the Fort Wayne turbosupercharger plant. An airplane engine must have oxygen in order to operate. The turbosupercharger scoops in and compresses the rarefied air of high altitudes. Operation is both directly from the crankshaft by a system of gears and by using the exhaust gases of the engine. The turbosupercharger provides near-sea-level air pressure to the motor, making high altitude performance possible. Here it is again: control, stability, tenaciousness.

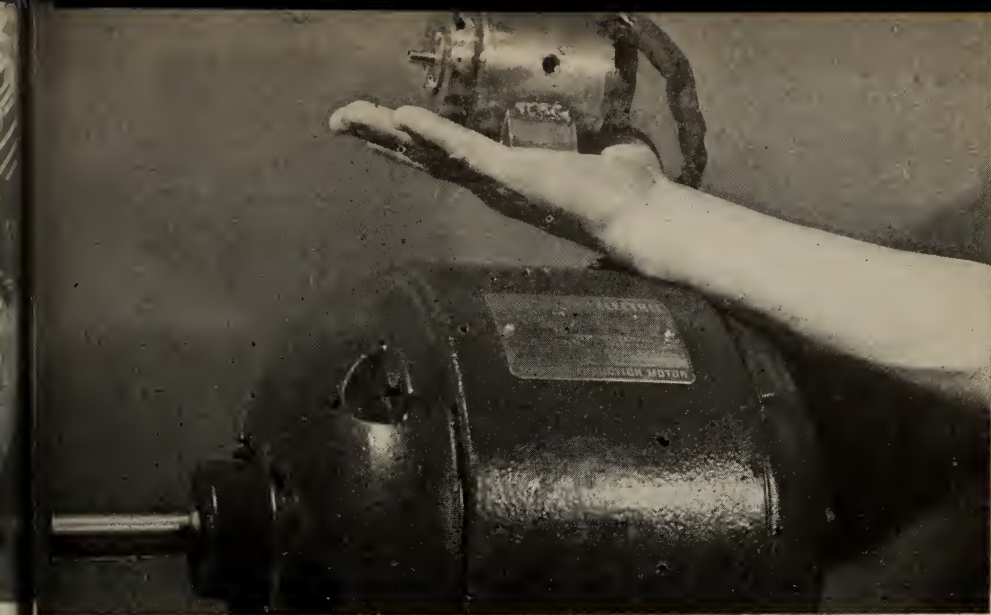


Photo: Courtesy General Electric Company

Only 1/15th the size and weight of the average 3 hp. motor this mighty 7 lb. midget develops the same horsepower. It operates at 120,000 rpm, 2000 every second. This is 65 times the speed of the average 3 hp. motor, or 13 1/2 times the speed of sound. It is water cooled, consuming 1/2 gallon per minute. Oil-mist lubrication type bearings are used. If automobile wheels could turn at the same speed, cars could travel 10,000 miles per hour or 165 miles a minute. Wow! What's next?

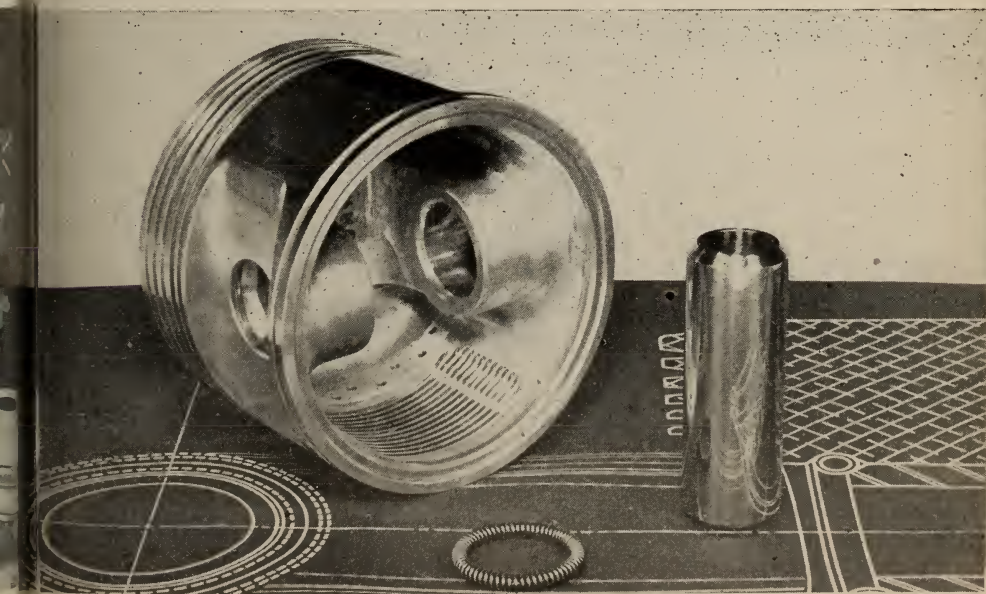


Photo: Courtesy Wright Aeronautical Corporation

An example of advanced technology. The mirror-like surface of this Cyclone part has a maximum deviation of 8 micro-inches, or 8/1,000,000 inch. Total area of any superfinished part is decreased but load bearing area is increased due to greater area of contact per square inch. This gives greater tensile strength, greater resistance to corrosion, longer life, better operation.

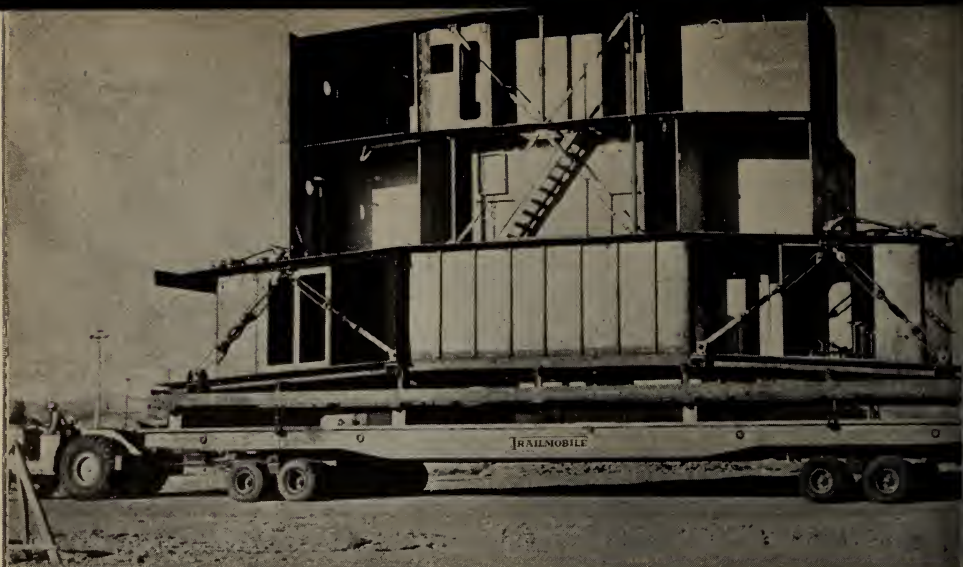


Photo: Courtesy The B. F. Goodrich Co. and The Trailer Co. of America

Delivering Victory ships in 150 ton slices. The pre-fabricated part is as high as a house and as long as a flatcar. How many horses would it take to pull this load? It would require ten times as many men as horses. The American method is to use energy and technology, not human toil and hand tools. Cut the energy or disrupt the technology and we go back 200 years.



Photo: Courtesy Bethlehem Steel

Here is something else new in America. As technological methods become more complex it will become necessary to enroll more and more Americans into the orbit of technology. These untrained people, negroes and whites without discrimination, are being taught the fundamental physical principles of industry. It is a class in electricity. Once conditioned to the scientific approach to industrial problems it will be quite so far to the idea that social problems also are amenable to the methods of science.



Photo: Courtesy General Electric Company

This is a broaching machine working on 20 mm. anti-aircraft gun barrels. It draws four broaches, each slightly larger than the one before it, through the barrel and also cuts the nine rifling grooves simultaneously. This machine reduced a one and one-half hour operation to 12 minutes. Man-hours per it must decline. Basic machines produce basic effects industrially and socially. Do you see?

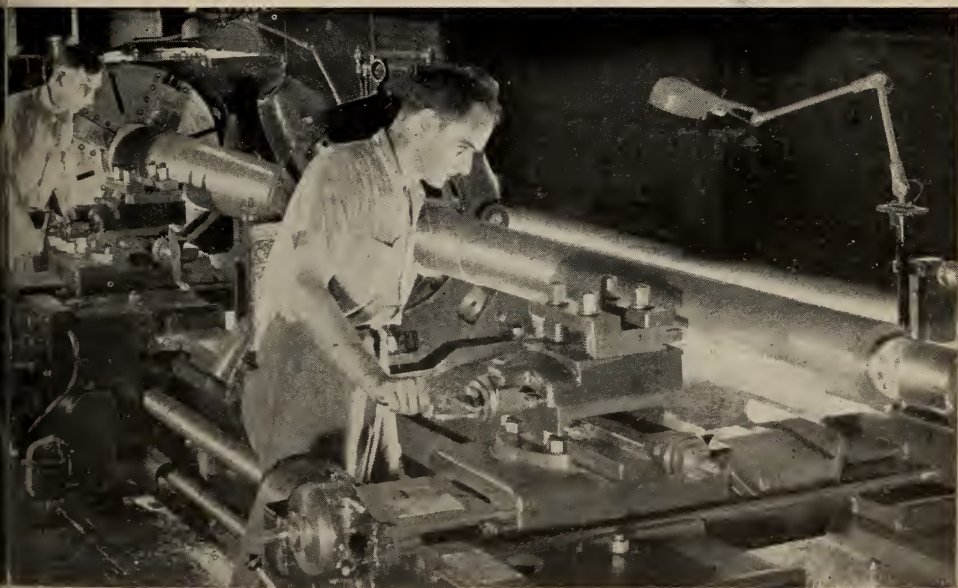


Photo: Courtesy General Electric Company

Here is a giant two-man lathe machining the barrel for a 90 mm. gun. This piece requires the use of 3 other machine tools. Such tools lie at the base of industrial production. If machines make jobs, as some dithyrambic advertising writers assert, why was there no unemployment prior to the machine age, say 1910 A.D.? Why is the death rate of old jobs rising faster than the birth rate of new jobs?



+516

Official Photo U. S. Air Force

USAAF aviation engineers, building B-29 bases in China with native labor. Men, mules, carts, wheelbarrows, shoulder baskets, toil and sweat. That's the Chinese way of building a landing field. 10,000 human laborers can do only as much work as TEN 100 hp. engines operating modern earth-moving equipment. The rate of energy conversion in China is extremely low. In America it's very high.



Photo: Courtesy Caterpillar Tractor

Here's the American way of constructing a landing field. The engines shown here probably have more power than the entire army of men shown in the previous picture. On this field at Johnstown, Pennsylvania, Caterpillar Diesel D8 Tractors with LaPlant-Choate scrapers moved 1,000,000 yards of earth one-half mile. They worked 23 hours a day and each tractor used $5\frac{1}{2}$ gallons of 7c fuel per hour.



U. S. Army Signal Corps Photo

are some wrecked Jap power installations on Kwajalein Atoll after the 7th Infantry Division U. S. Army took over on January 31, 1944. The tenuous line has snapped under the impact of a superior technology bent on destruction. In these pictures some paradoxes of technology are illustrated. What applies to one, or a series of advanced technological mechanisms, applies equally to a social system that has become dependent upon technology and the conversion of extraneous energy for power to operate.



Photo: Courtesy West Coast Lumbermen's Association

is the forest primeval.' Virgin timberland in Oregon. In this raw physical environment it is hard to survive and prosper by human toil and hand tools alone. Under Price System operations social stability is extremely tenuous and easy to wreck. Destroy America's technology and the few survivors go back to nature's first principles. A technological society is easy to control by technological methods. Social stability comes from collective social interest. Social violence is TABOO in the Power Age.

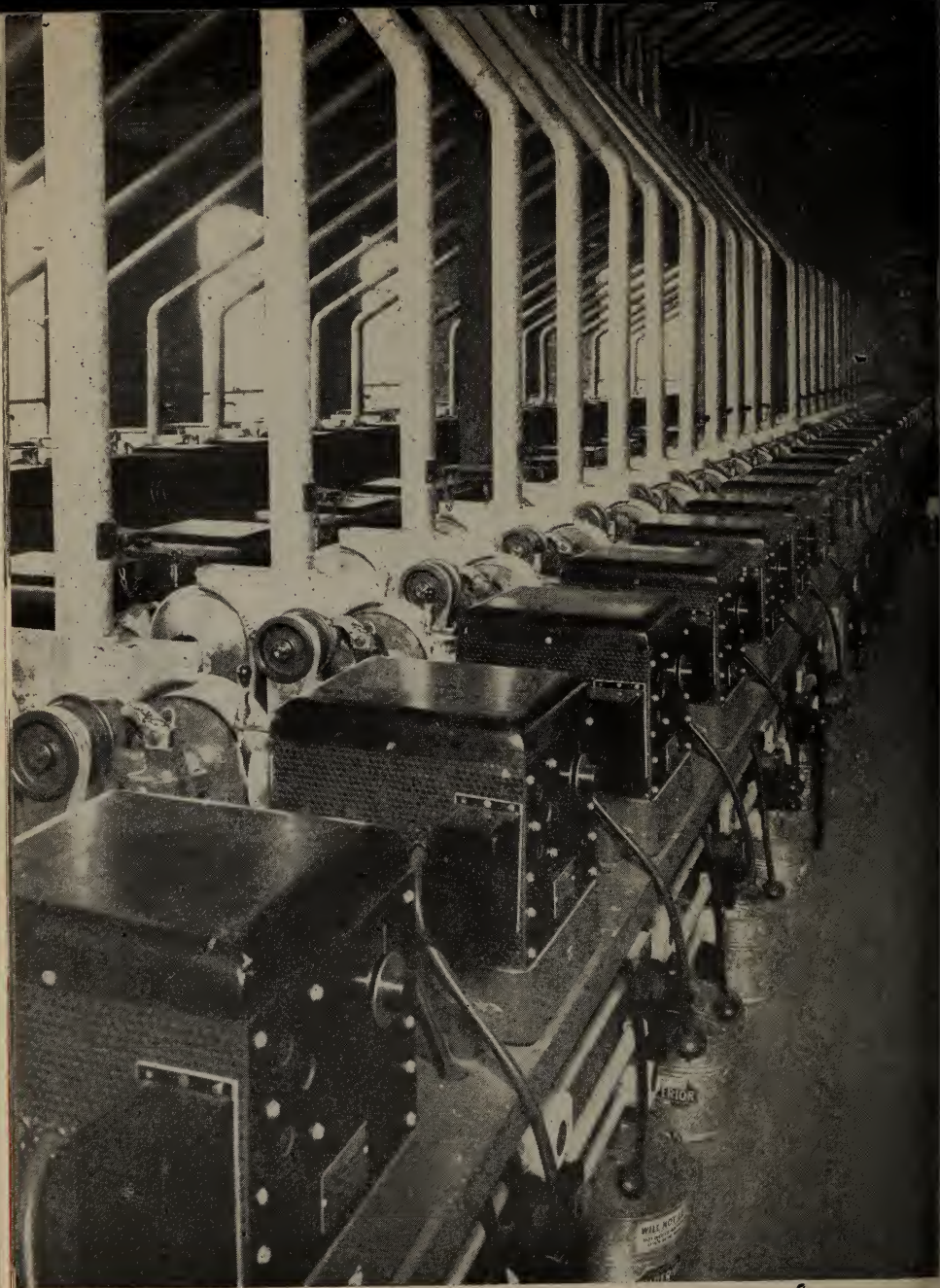


Photo: Courtesy General Electric Comp

Here the technological process of reducing labor and skill to simple operations is carried to its ultimate development. This is a battery of photoelectric-thyratron bean sorting machines in action. No human attention is required except for maintenance. The process is fully automatic. The beans pass before electric eyes. The white beans get by but the discolored ones are flicked into a reject chute by mechanical fingers. A fine watch is a very intricate mechanism but even a moron can wind it up.

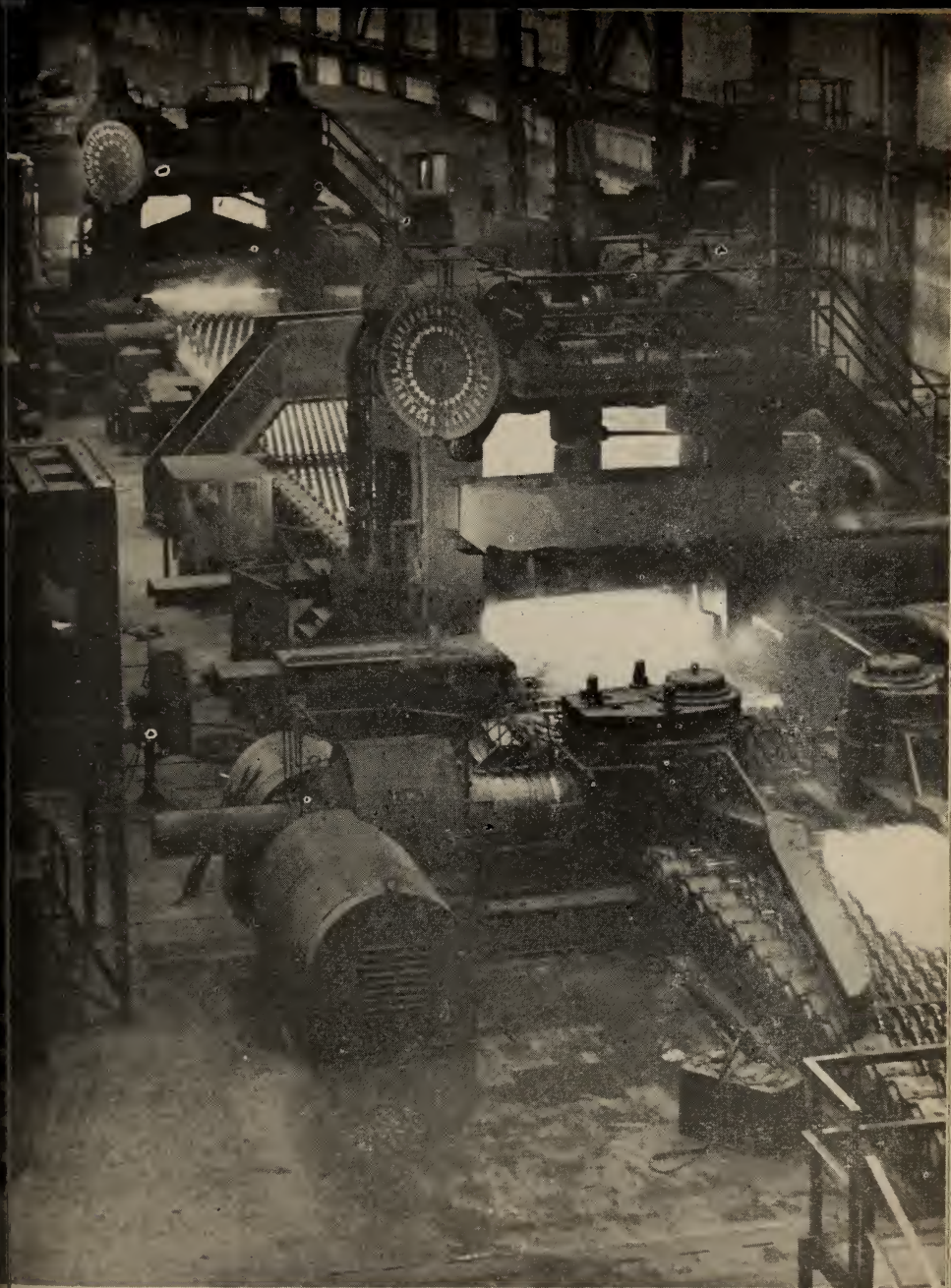


Photo: Courtesy Kaiser Company Incorporated

Electric
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the plate rolling mill at Fontana, California, is rated at 300,000 tons of ship plate a year. You can count the number of men attending this installation on the fingers of one hand. Massive assemblies like these are fundamental and prior to most other industrial production but they are just as dependent on precise control. The power to energize them comes in over a thin, flexible wire, symbolizing the thin line of demarcation between advanced technology and the crudity of human toil and hand tools.

From the Camera's Eyevew

Technology Goes To War

'There Was The Door To Which I Found No Key'

It has been said that man is the only animal that wages war upon his own kind. Whether this is so or not it is a fact that the history of war is as old as the written records of mankind. The Supreme Court of the United States once defined war as 'every contention by force between two nations in external matters, under the authority of their respective governments,' (Bas. v. Tingy, 4 Dallas, 37).

In ancient literature we can read the story of Numa Pompilius (714 to 672 B.C.), the second King of Rome. During his reign, he had a shrine built to the pagan God Janus, the God of gates and doors. Pompilius specified that the gates of the temple should be kept open whenever Rome was at war and closed when peace ruled over the city. Existing records show that between 672 B.C. and 14 A.D. the gates were closed only four times, for brief periods. As a matter of record, since 1600 B.C. up to now the world as a whole has experienced less than 330 years of peace.

There is something symbolic in the specification that the shrine of Janus should be open to the people only in time of war. Perhaps it was symbolical of the fact that the 'glory' of war was the only event making escape from the grinding life of toil and scarcity possible to mankind in that day and age. In war the gates of adventure opened wide and men could march off to loot, rape and kill 'under the authority of their respective governments.'

When peace descended again upon the land and the adventurers returned home to the boredom of social conformity, they found the gates to the Temple of Janus closed, symbolizing their reimprisonment within the structure of a social system based on human toil, hand tools and an everlasting hand-to-mouth scarcity.

Today the framework of a high energy civilization is evident on all sides. Warfare, now, is waged with the tools of social change. By this we mean that the processes and mechanisms introduced during the war have a terrific impact upon the social structure when it contracts into a state of peace. The factors of social change grow steadily more portentous. And, what is the social picture today? Nearly all our 'best minds,' our 'statesmen,' our 'tycoons' of industry, our 'leaders' in education and the professions and all the 'respectable' and 'nice' people of the 'better classes' are sound asleep. They view the social problems of today within the context of events that occurred a thousand years ago.

'—No Less Renown'd Than War'

But, after every war comes a peace. Then, symbolically, the gates of Janus swing closed. Then, soldiers return home, war industries close, war workers cease working at war work. Then, private enterprise must, perforce, return to its time-tried rackets. Then, it will again have the freedom it is forever bellyaching about to demonstrate for the umpteenth time its functional incompetence to distribute an abundance. Then all the human components of the land will be reimprisoned within the stifling framework of a social system, dependent on technology and extraneous energy, but operated by handicraft-agrarian methods handed down from the time of old King Pompilius. When peace again descends upon this fair land, the impact of technology will be reversed, like a boomerang, from the open door of war, and directed with shattering force upon the social structure at home. The compulsion for social change will descend upon America with cataclysmic certainty.

As sure as the sun will rise above the eastern horizon tomorrow morning, the trend of physical events instituted by science and technology, its pace and power accelerated by war, will proceed inflexibly to its rendezvous with this generation of Americans. There is no escape for us from that fact. Total war will either be followed by total peace or social disintegration. The signs all point in one direction. The tools of social change are sharp and they cut both ways. America must be prepared with a program in harmony with the trend of events.

Law of the Jungle

The average American soldier is as courageous as the soldier of any other nation, and in most instances far more adept and resourceful. When it comes right down to cases, he is not afraid of anything that may happen. He can take it as well as dish it out. On dozens of war fronts all over the world, such Americans are united as never before in the history of their country.

On the home front other Americans are also united as never before in the history of their country. But this unity is of a different color than that exhibited by G.I. Joe. The American soldier has surrendered his constitutional privilege to pursue individual and economic gains, for the duration. He is enrolled in National Service. The American citizen in the civilian economy has not surrendered anything. He is riding a high tide of economic prosperity. He is enrolled in Individual Service.

Here we have two clashing behavior patterns. The soldier in National Service is dedicated to the country as a whole. The civilian in Individual Service is dedicated to personal gain. Except for a few patriotic Americans, the home front is a unity in rejecting all suggestions that would put civilians on the same basis as the Armed Forces. Every minority pressure group in the land is scheming to further enhance its differential advantages at the expense of the majority, which includes all other minority pressure groups.

G.I. Joe knows all this by rote. He ought to because he spent all his life as a part of that economy until he went off to war. He also learned much from his father who fought in the first World War and was promised a postwar world 'fit for heroes to live in.' Finally, he remembers the 'heroic' feats of deprivation by which his family was able to survive the Great Depression. The soldier knows that the war will end some day and he will return home again to a competitive economy. He knows that the Rules of the Game of the Price System require him to chisel a 'place' for himself or be disinherited as an economic outcast from society.

Americans Fear Only Americans

The American soldier knows that many, if not most, civilians have been doing rather well for themselves since the war began. He knows, or thinks, that they are intrenching and consolidating their economic positions while he is away. And, he thinks that he will be at a disadvantage in spite of his so-called 'Bill of Rights' and all the political schemes to assist him. Here is the only thing the American soldier fears. He is afraid of his fellow Americans and of the postwar era. This is the source of his distrust of civilians.

In return, the civilian distrusts the soldier. He is afraid that G.I. Joe will take his job away from him; or chisel into his business when the war is over. He is afraid that the returning soldier will get a preferential advantage denied him. The civilian supports the war to the extent that the Rules of the Game of the Price System permit. But the same Rules dictate that he must provide for his own postwar position. The Price System guarantees no citizen anything, except the opportunity to exercise his mercenary instincts. The penalty for non-compliance is want and poverty in the midst of plenty.

The Price System regiments its human components into compulsory economic and social hostility against each other. That is how it operates. Is it any wonder that America is a welter of social confusion? The confusion is organized. Is it any wonder that Americans are afraid of each other and the postwar period ahead? The wonder is that we have done as well in this war as we have. The answer is not to be found in the ethics, morals or principles of the Price System, if any. It resides in the Great Technology of America, grown to maturity in the Power Age.

For the first time in history, we must prepare for peace in time of war. This can only be done by the installation of an overall design of National Operations. There is such a blueprint ready and waiting to be installed. It will guarantee a secure postwar position for every citizen, soldier and civilian alike.



Official U. S. Navy Photo

The technological character of this war is illustrated by the special types of ships required to transport men, machines and materiel. The landing craft LST pulls up to shore, two big doors open, a ramp lowered and the half tracks, tanks and trucks roll out. LST are built at shipyards along inland rivers and Great Lakes ports. At Attu, Kiska, New Guinea, Rendova, Sicily their gaping jaws have opened wide.



Photo Courtesy Pennsylvania R.

75 trains! It must move as a unit—trains follow one another a few minutes apart. A modern division consists of more than men alone. There is also tanks, armored cars, tractors, artillery, anti-aircraft guns, etc. This is a technological war! Transportation is the keystone of logistics. This is the engineering job of getting supplies to the right place at the right time in the right amount.

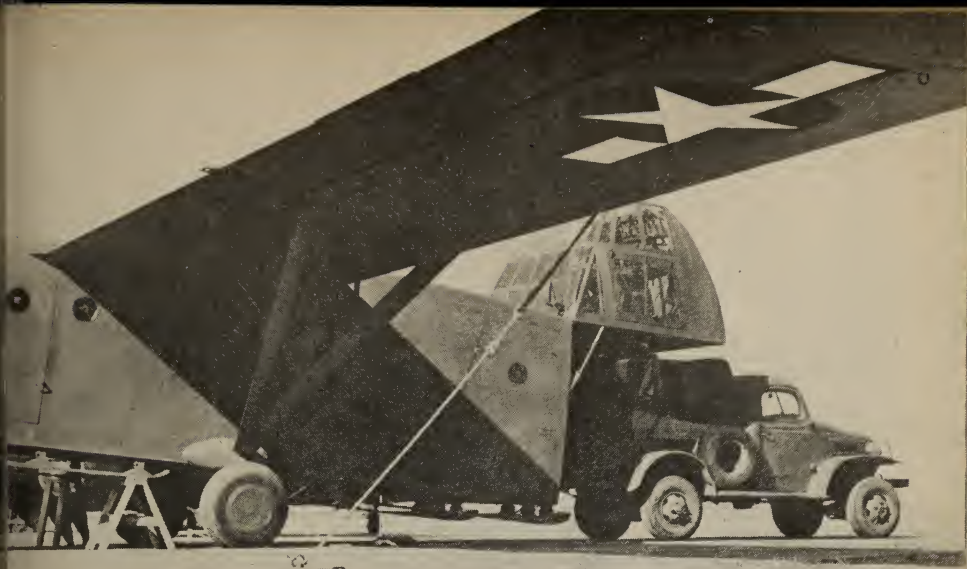


Photo: Courtesy U. S. Army Air Forces

Literally riding on the wind. The Army's newest glider YCG-13. It will transport more than 24 infantrymen with full packs, mortars and machine guns. Two jeeps with their crews or a medium truck with accompanying equipment may be loaded and unloaded through the nose. The YCG-13 is now in mass production for the Air Force Troop Carrier Command. It weighs about four tons empty, and is built largely of plywood. On the sea and in the air, technology is everywhere. Ubiquitous is the word.



Official Signal Corps Photo

This new Army combat reconnaissance car M8, designed by the Ordnance Department, combines the speed and maneuverability of an automobile with the punch and armored protection of a light tank. The M8 weighs 8 tons and is capable of high speed over rough terrain. It mounts a 37mm cannon and a 30 caliber machine gun. Notice the low silhouette and high ground clearance. The tough front simply pushes down and rides over underbrush and trees. A crew of four handles the M8.



Photo: Courtesy United States Rubber Company

Oil-resistant synthetic rubber lifesaving suits marching off the production line. To the Merchant Marine they come in mighty handy sometimes. The drawstring closure at the top (head covering not shown) keeps it snug at the neck, leaving only the face exposed. The harness device around the waist is lift oil covered seamen from the water. Made of one piece they keep the wearers dry. Buoyancy is supplied by a life vest worn underneath. On the land and on the sea, technology hastens victory.



U. S. Army Signal Corps Photo

Then we have the army's amphibious trucks called 'Ducks.' They haul $2\frac{1}{2}$ tons of supplies, are properly driven in the water and have six-wheel drives which carry them at high speed on land. They are designed for putting men and supplies at ordinarily inaccessible spots, supplementing LST. They hit the beach and keep right on going. America wages war with the tools of social change. The more the better. Catch



Photo: Courtesy United States Rubber Company

Technology smooths the way with an immense three dimensional terrain model at Attu Island in the Aleutians. Seizure of the island was preceded by a study of the model. These collapsible rubber contour maps are based on aerial photographs, reconnaissance reports and pre-war maps. Technology reduces the cost of invasion in toil and lives. The greater technology becomes the higher goes the production ability, the lower goes the scarcity, and the more the Price System muddles around. Catch on?



Official OWI Photo by Hollem

There is a new industry for war. Fitting and painting 36 foot wooden ramp boats at a southern shipyard. These carriers are built of prefabricated sections. The completed boats are launched by a crane. They are used for making beach landings of men and equipment. Amphibious warfare in the Pacific, with its island hopping and by-passing, requires equipment never made before. Necessities of the job dictate the material needed. Modern wars are waged with the tools of technology.



Photo: Courtesy Province of Quebec Publicity Bureau
Here is a different kind of flying. Towed by a twin-motored Dakota these R.C.A.F. officers recently made the first glider flight across the Atlantic, from Montreal to England. Glider trains are being talked about for post-war use as freight trains of the sky. It's simpler to build giant Flying Wings. They'd require less man-hours per ton miles of freight hauled. Who wants to work anyhow?

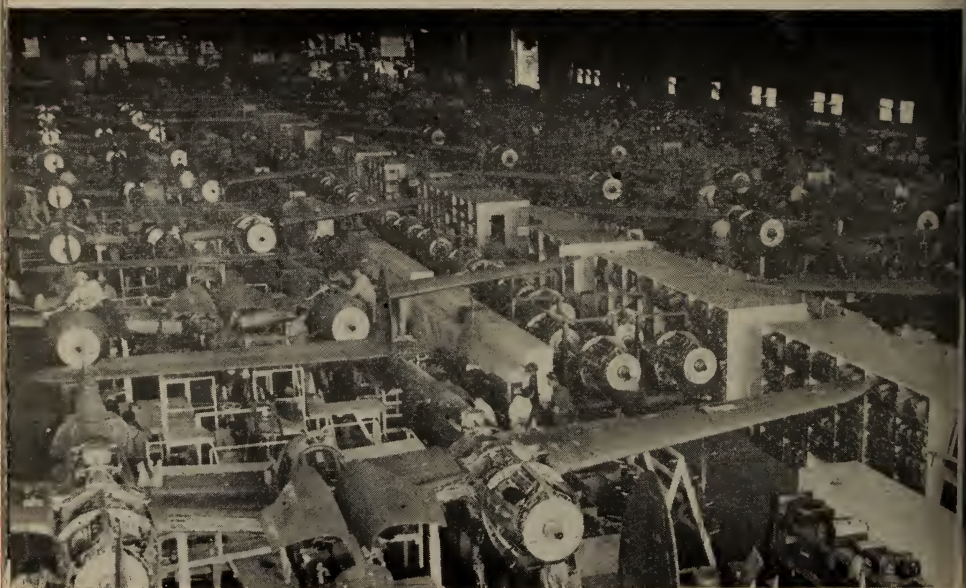


Photo: Courtesy Lockheed-Vega
The P-38 is produced on a continuously moving assembly line. The installation of this line required eight days but it doubled the plant's output and resulted in a 40 percent reduction in man-hours per plane. Sub-assembly lines carry engines and parts to the main line. Workers ride the ships as the line moves along. Maximum production involves maximum technology and minimum man-hours of labor.



Official Photo U. S. Air Force

...irus flew too near the Sun, the wax of his wings melted and he was drowned in the sea. So goes the Greek myth. Not so with these B-17 bombers of the U. S. Army's 8th Air Force. Caught in the rays of the sub-stratosphere sun more than 16,000 feet above the North Sea the camera transfixed them on film. The weird cloud formation shown beneath seems like the frozen surface of a dead world. The Flying Fortress is a good plane, but the Flying Wing will fly 5 times as far and carry 5 times more bombs.



Photo: Courtesy U. S. Army Air Forces

...waterproofed jeep undergoing tests in a stream. The jeep was not waterproofed with anybody's inventions, but with an asbestos compound applied to vital parts. There is a formula ready for protecting America's social structure against postwar collapse. It was compounded from a physical appraisal of American history and a scientific analysis of her social problems. The formula is Total Conscription of Man, Machines, Materiel and Money, with National Service from All and Profits to None.



Photo: Courtesy General Motors Corporation

'Lay that carbine down babe, after you've inspected it.' This short, light, deadly weapon (we mean the gun) weighs less than 5¼ pounds and is replacing side arms and rifles in jungle and invasion fighting. It's the U. S. Army's new M-1 30 cal. all-purpose carbine. As weapons become more efficient they tend to become smaller and lighter with greater power. That's almost a rule for all mechanisms.

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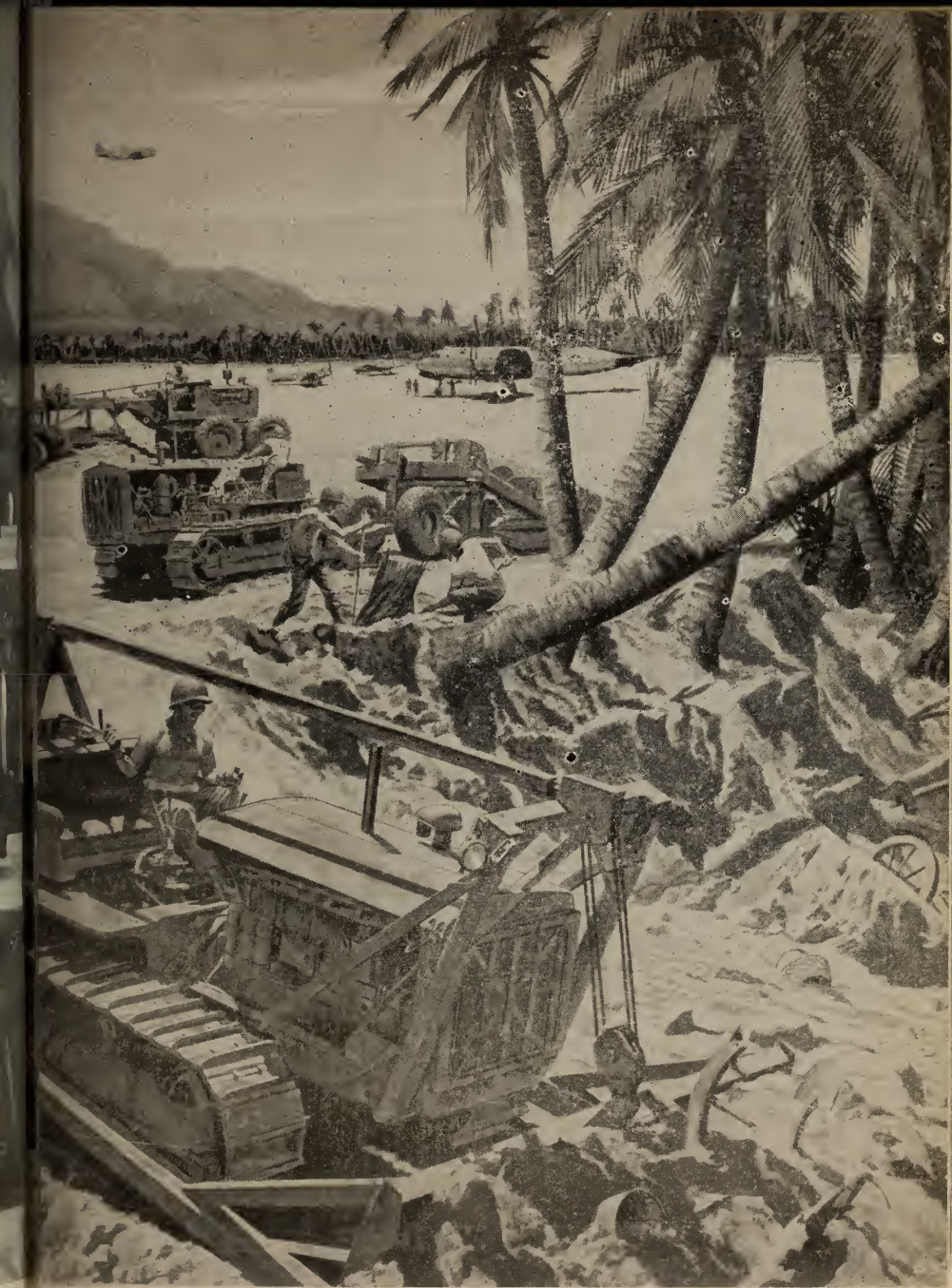


Photo: Courtesy Caterpillar Tractor Co.

...el bulldozers, scrapers and earth movers, clearing a landing field somewhere in the jungles. Models
... use close to the fighting front have armored cabs for the operator. American technology follows
... American soldiers on dozens of war fronts. Japan hasn't got a chance against the stuff shown in these
... tures. The oxcart age is gone in America but oxcart thinking is still with us.

'Free Enterprise' or Free Technology

Diagnosis and Prognosis

by The Peripatetic Technocrat

DIAGNOSIS

'Free Enterprise' Means:

Freedom to conduct a system of trade and commerce solely for the exchange of commodities, on the basis of scarcity determined values for a profit; without regard to distribution;

Freedom to exploit the natural resources of this Continent and its public collectively for all the private profit the traffic will bear;

Freedom to permit America's No. 1 natural resource, the land, to be eroded and lost in the oceans by unscientific agricultural practices, under-reforestation and over-logging;

Freedom for all minority pressure groups to wage political and economic conflicts for preferential advantages at the cost of other minority groups and the general welfare of the whole;

Freedom to maintain monopoly controls in order to hold up prices and enforce scarcity on the great majority;

Freedom to bury patents, inventions and processes so that industry will not become too efficient;

Freedom to permit criminal waste in industrial and agricultural operations in order to increase profits;

Freedom to manufacture shoddy goods so they will wear out faster and have to be replaced oftener;

Freedom to permit special privileges to the favored few, while enforcing social regimentation upon the great majority;

Freedom to poison the wellsprings of public information by suppressing and distorting the real news and emphasizing transitory and superficial happenings;

Freedom to carry on a conspiracy of silence against the design of a scientific social system that can produce and distribute abundance and security to all citizens and provide maximum defence for this Continent;

Freedom to oppose every governmental measure intended to enlarge the common welfare, which might restrict special privilege;

Freedom to carry on business as usual and exact a greater profit than usual while the country is at war;

Freedom to make cartel agreements with enemy nations even though such agreements endanger the security of the homeland;

Freedom to create ever higher mountains of public debt for the sole purpose of maintaining a system of private profit and privilege; and

Freedom to propagate the appalling, asininity that 'FREE ENTERPRISE' means anything else except the clauses contained in this analysis.

PROGNOSIS

Free Technology Means:

Freedom to realign the social structure in conformity with physical laws, so that the industrial system will be geared to abundance and distribution on the basis of physical cost;

Freedom to guarantee economic security to all citizens from birth to death as a right of citizenship;

Freedom to conserve the natural resources of this Continent and advance the general welfare of its people collectively by all the means that science knows;

Freedom to abolish the waste of human talent and ability by opening all avenues for its expression;

Freedom to technofacture superior goods, so they will last as long as possible and not have to be replaced often;

Freedom to abolish special privileges to a favored few by creating a setup wherein voluntary acceptance of scientific controls will be acceptable to all;

Freedom for each individual to be rewarded with social prestige and position commensurate with his social accomplishments;

Freedom to keep the wellsprings of public information untrammelled and uncontaminated, so that all citizens will be aware at all times of the occurrence and meaning of physical events and trends in all parts of America and the world;

Freedom to enact a new contract of citizenship as the basic law of the

land, wherein class favoritism will be outlawed and servitude to private masters made impossible;

Freedom to protect and enhance America's No. 1 resource, the land, by engineering with nature so as to restore dynamic equilibrium between croplands, forests, water flow and the underground water table;

Freedom to construct an all-Continental inland waterways system for low-cost transportation of bulk freight; and to build thousands of earth dams in order to control the run-off of water;

Freedom to build an all-Continental system of super-highways for rapid and safe transportation;

Freedom to eliminate public and private debt by using a medium of distribution which makes the creation of debt impossible;

Freedom for all Americans to participate equally in national service in time of war, unrestricted by economic pressures so that no citizens can get richer in any way while blood is being spilled in defense of the country;

Freedom to provide the maximum defense for this Continent by building up its military, naval, aerial and coast defenses to unsurpassed strength and organizing them along technological lines according to their respective functions;

Freedom to liquidate pro-fascism at home as being Continental treason and contrary to the future destiny of America as a whole.



U. S. Forest Service Photo

Here is something memorable accomplished by the unrestricted exercise of opinions. Timber cut or destroyed in 1943 was 50 percent more than total growth. The volume of standing saw timber in the U. S. has been reduced by 40 percent in the last 35 years. The 'right' of 'free enterprise' to denude the nation's forests is intimately related to our disappearing top soil and to the diminishing quantities of available fresh water in many communities. Waste not, profit not. That's good business in our time



U. S. Forest Service Photo

Modern industry depends on water. The Water Resources Branch of U. S. Geological Survey is calling attention to the falling underground water table; the Forest Service points to our disappearing forests; the Soil Conservation Service complains about land erosion. But, 'free enterprise' continues to sabotage the nation's future economic life. This scene shows what can be done in proper cutting and reforestation. Opinions or facts; philosophy or measurement; deserts or fertility, take your choice.



Photo: Courtesy Erie Railroad Company

oil trains forming in the yard at Marion, Ohio. Almost 1,000,000 barrels of oil are moved every day by the railroads. In 1918 they hauled 405,000,000,000 ton-miles of freight. In 1943 with 625,000 fewer freight cars, 21,000 fewer engines and a million less workers than in 1918, they hauled 725,000,000,000 ton-miles. That spells better technology, higher load factors, more products, less work.

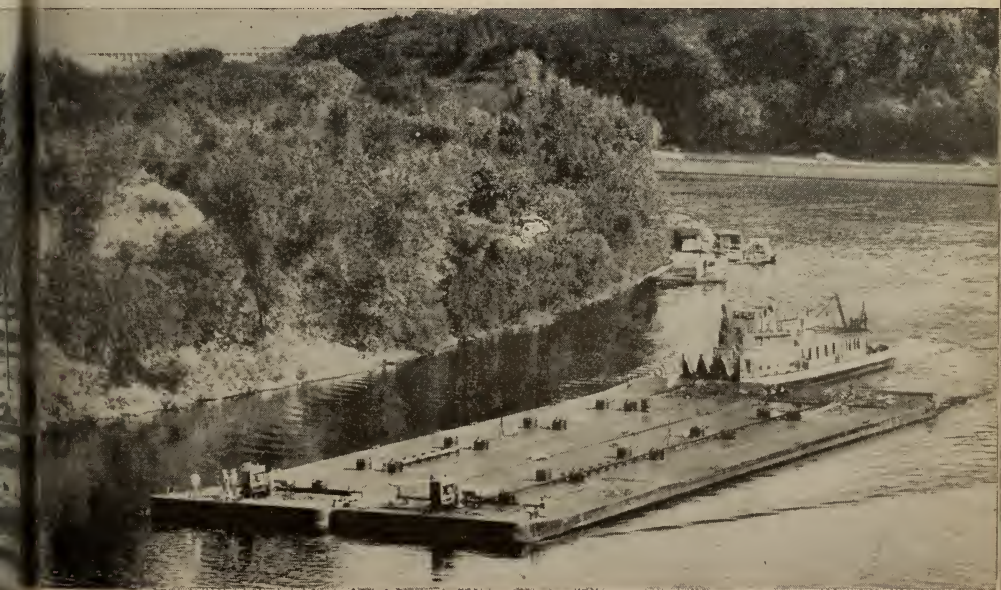


Photo: Courtesy The Pure Oil Company

The Anker L. Christey towboat pushing two oil barges around a bend in the upper Mississippi. It is a 8 foot long, 30 foot wide, V-bottomed, triple screw, 1200 h.p. Diesel boat, with a crew of 12 men. Its load is 32,000 barrels of gasoline at a land speed of 9.21 m.p.h. It has hydraulic, single lever control engines and rudders. Waterways are the most economical means of transportation for bulk freight. For a scientific discussion of its possibilities see A-17 TECHNOCRACY magazine, October 1939.



Official U. S. Navy Photo

Helium inflated Blimps like this one patrol our coasts against submarines. The Bureau of Mines operates 5 helium plants producing 25 times the prewar output. Helium is also used for asthma, tuberculosis, caisson disease and in welding magnesium. The U. S. Government has a near monopoly of this gas. That's one thing the fascists didn't get. Reason? No free enterprise in helium. Get the point?



Signal Corps Photo

The Army Service Forces Transportation Corps operated the Iranian railroad in Persia. Trainloads of American-made war material moved through the ancient deserts and mountains to northern supply depots. It was a part of Lend-Lease to Russia. American technology is capable of flooding the world with war goods. It has done it. If it can provide abundance in war, it can do it in peace.



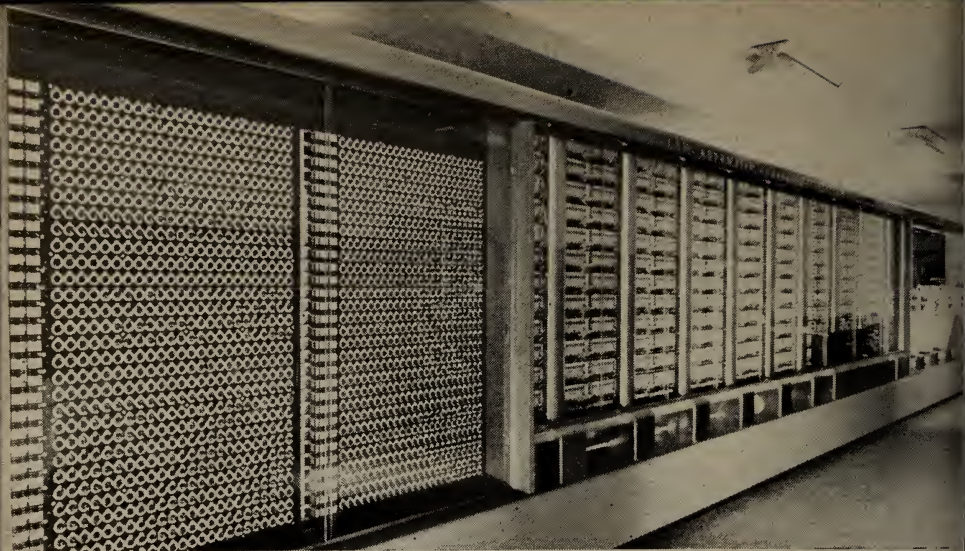
Photo: Courtesy The Elmco Corporation

And I learned about minin' from that.' Here is the Rocker Shovel, powered either by compressed air or electricity. It has a one-half yard bucket. The operation is an overhead arm action that throws the rock into the loading car behind. This model with one man tending it will load up to 5 tons per minute. A husky mucker with a shovel can muck 4 tons per hour. From the neck on down a man is worth about 10th of a horsepower. As measurement proceeds, the validity of opinions declines. See?



Photo: Courtesy Caterpillar Tractor Co.

Diesel D8 Tractor with Athey Mobiloader loading stock piled ore into railroad cars on the Mesabi range in Minnesota. Material is moved 80 feet and loaded at the rate of 330 tons an hour. Imagine doing this with oxcarts and shovels! How much could you load in one hour? The difference is technology. How long would it take to settle up a new frontier now, if we had one? But where is there one?



Here is the greatest skill and man-hour killer up-to-date. It's the IBM Automotive Sequence Control Calculator. It solves almost any known problem in mathematics correctly out to 23 figures and if an error is made in the process the machine will stop. A problem which required four experts 3 weeks to work out with ordinary calculators was solved in 19 hours. Whew! There's no space to explain more; besides we're stuck. But, how about applying it to measuring some of America's social problems?



Photo: Courtesy Norfolk and Western Railway

And here's what it's all about, North America. We mean the physical America of industrial equipment, resources, rivers, mountains, valleys, prairies, lakes, people, etc., the land itself. It's worth working and striving for to bring its little Price System social institutions up to the stature of its great technology. Here's a scene from the Roanoke Valley in Virginia. We may sing 'carry me back' till we're green in the face, but events are driving us forward to the New America, willy-nilly.

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U.S.D.A. Photo

preliminary patterns of science on the ground and in the air. It was said that air power will win the war; and also that food will win it. Every little bit helps. Contour farming holds soil, water, seed and fertilizer on the land, helps to increase yield. It is a step toward agro-technology. The trend in aviation is toward the aerodynamically correct Flying Wing. We'll get there after while.



OWI Photo

TVA transmission lines in Alabama. Out over the singing wires in all directions goes the invisible of America. Extraneous energy is the keystone of the Power Age; along with technology it makes potential abundance possible for all citizens. America has plenty for everybody in peacetime or war. The problem of distribution is simple but we have to scrap the methods of yesterday.



Photo: Courtesy National Dairy Products Corporation

He canning and gardening are all right, but you can't solve a mass technological food problem with the methods of feudal agrarianism. America's technology is going to run us out of scarcity soon and we'll be back into abundance whether we like it or not. It requires Price System fascism to maintain scarcity in goods and services and to uphold oxcart ideologies. They're all un-American. 'Out, Damned Spot!'

From the Camera's Eyevue

War, What For?

Shouting The Battle Cry of Freedom

The causes of war are manifold. They have been traced to personal quarrels for the possession of a throne, or a woman. There have been revolutionary wars for the independence of one country from another. Among other causes are political, economic, religious, racial and social factors. Tersely expressed, wars have been waged for 'God, Greed and Gold.'

The War of the Roses in England (1455-1485) is an example of a war for the possession of a throne. The legendary Trojan War (circa 1194-1184 B.C.) is poetically reputed to have been waged over a woman. The American Revolutionary War (1775-1783) and the Greek-Turkish war (1821-1828) are two examples of wars waged for independence. The Franco-Prussian War (1870-1871) was preceded and precipitated by much political bickering between Napoleon III and Bismarck. The war for the rich gold mines of South Africa, called the Boer War (1899-1902) was an out and out economic war. The Biblical Wars of the Israelites (The Chosen People) and the Boxer Rebellion of 1900 in China were racial wars. Finally, the war of defense waged by Russia against the assaults of the western democracies, immediately following the First World War, is a case in point where social factors predominated.

Warfare has often been distinguished by codes of ethical conduct on the battlefield, and toward a defeated enemy. For instance, the terms by which the Boer War was concluded were very magnanimous. The United Nations today are observing the terms of the Geneva Convention. The American Civil War was concluded on generous terms to the Southern States. So, although war in itself is hell, men have throughout the ages tried to save their conscience and save their face by surrounding it with gentlemanly agreements and knightly codes.

Am I My Brother's Keeper?

Not so with religious wars. Organized murder carried out in the name of Jesus Christ has always been characterized by the utmost savagery and cruelty. Europe has been laid waste prior to World War II by religious wars. The part played by reactionary ecclesiasticism in this war yet remains to be proclaimed by history.

The first period of religious wars in Europe occurred between 1559 and 1598. These wars were caused by the hostility of the established ecclesiastical, political and economic institutions toward the Reformation then spreading over Europe. Protestant Holland was ravaged by Catholic Spain. Philip II, King of Spain, wrote the Pope that 'he would lose the provinces (The Netherlands) or would maintain their Catholic religion.' The struggle lasted 37 years. Eventually The Netherlands won their independence.

France was split into warring factions over the Reformation. Internecine strife went on for years and culminated in the Massacre of St. Bartholomew's Eve August 24, 1572. Thirty thousand Protestants were slaughtered. When the news reached Rome, the Pope ordered a jubilee and a procession to the Church of St. Louis and caused the Te Deum to be chanted. This struggle ended with the Edict of Nantes by which King Henry IV of France granted toleration to his protestant subjects.

Spain then attempted to re-catholicize England. Philip II outfitted the Invincible Armada and set sail in 1588. Two violent storms, plus the British Navy, decimated his fleet and only a feeble remnant got back to Spain. This put the quietus on any further attempts of that nature.

The second time Europe was gutted by religious warfare was during the Thirty Years War (1618-1648). The forces of social reversion were still determined to stamp out the Reformation. It started as a war between Bohemia and Austria. Soon every country in Europe was involved. The Thirty Years War exceeded in savagery the invasion of Attila the Hun. Europe reverted to barbarism, and can-

nibalism was openly practiced in many countries. The holocaust ended in a number of treaties signed at Westphalia on October 24, 1648.

Song Of The Lorelei

And now we are come to World War No. 2. What kind of a war was and is this? What are the motivating factors behind the scene? Has it been a war for the possession of a throne or a woman? The asking of the question answers it. Has it been a war for the independence of one nation from another? Clearly not, since all the combatants are sovereign states. Has it been a racial war? Not in the European field, at least, because all the combatant nations are of the same race.

America went to war against the Axis Pact of Fascism. But what is fascism? Not many Americans know. Most of them think of something vaguely associated with Hitler, Mussolini, or Hirohito. The so-called free press of America, in harmony with its ancient function of service to the status quo, has done an admirable job of throwing a smoke screen around the real nature of fascism. These characters were and are only the 'fronts' for a proposed mode of social operation. After they have been eliminated from the international picture, fascism will still be there in all nations. Fascism is a reversion of civilization which is proposed by its proponents as an escape from the political, economic, religious and social problems which have arisen as a result of the world-wide industrial revolution.

Where that revolution has advanced the furthest, its concomitant social problems have become the more insoluble. Consequently, the pressure for social change brought on by physical trends is greater in the more advanced industrial nations. However, the social and religious hangover from the pre-Reformation age of authoritarianism is more pronounced in those nations which have made the least industrial advancement.

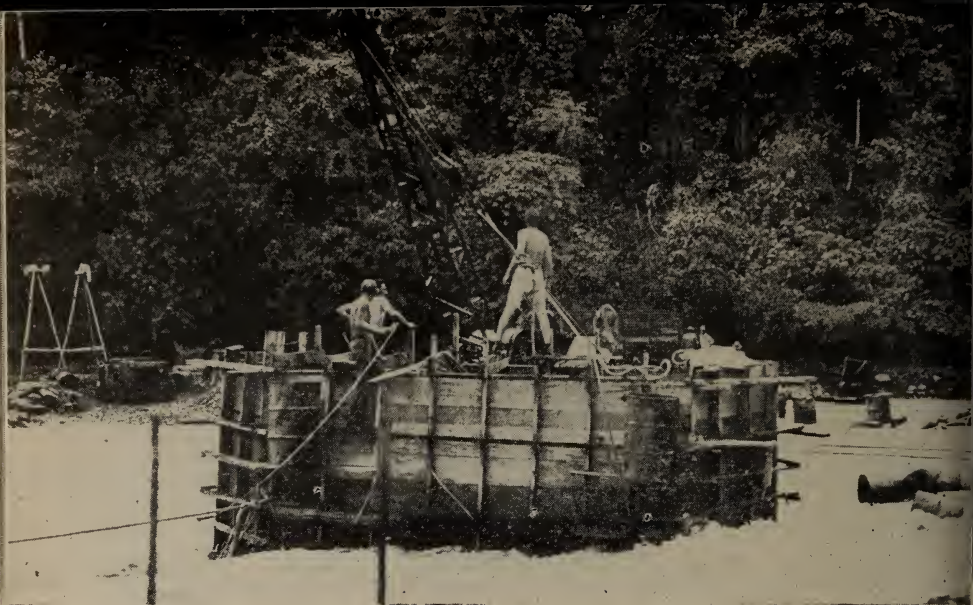
Turn Backward, Oh Time, In Thy Flight!

This is why the world-wide conspiracy to institute fascism as a mode of social operation originated in the industrially backward nations of the Axis Pact of Fascism. And this is why that conspiracy was largely abetted and financed by reactionary political, religious, economic and social forces in the more advanced countries. It was regarded as insurance against impending social change. It is physically impossible for the Price System to solve its major social problems and still remain a Price System. Since this latter consideration is the ne plus ultra of our dominant social consciousness, we are left with no other course except a descent into fascism. The triple oligarchy of ecclesiasticism, private enterprise and the political state must be maintained at all costs.

Here we have the clue to the motivating factors behind this present war. It is a war in which religious, economic, social and political factors predominate. After fascism abroad has been defeated, the counter-reformatory social attitudes and policy of its proponents will still remain, in all nations. The defeat of fascism abroad will result in a victory, only, for the status quo ante. America will again be where it left off in 1939.

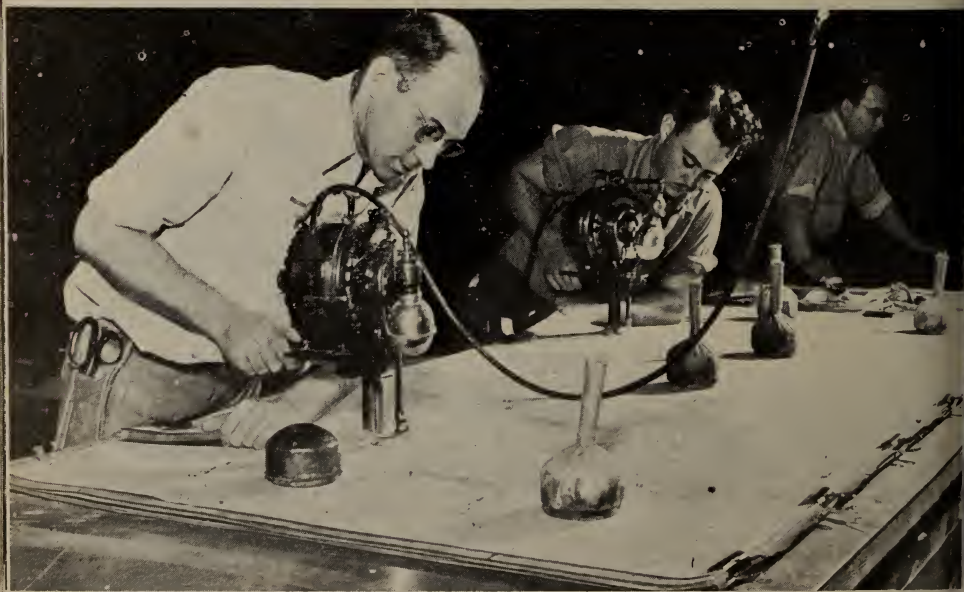
After this war all our internal social problems will again be with us, aggravated and multiplied. The pressure for social change will be intensified. The religious, economic, political and social forces which brought on this war will still be at work abroad as well as in America. So will the physical trend of events brought on by the advance of science and technology. America's future lies in obedience to its technological trends and not to the anti-social attitudes of the tripartite oligarchy of ecclesiasticism, private enterprise and the political state.

The only program of National Operations that can guide America safely through the transition period of the postwar era is **TECHNOCRACY'S PROGRAM OF TOTAL CONSCRIPTION OF MEN, MACHINES, MATERIEL AND MONEY WITH NATIONAL SERVICE FROM ALL AND PROFITS TO NONE**. It is America's destiny to move upward to a higher form of civilization, not downward to a lower one. America will have defeated its fascist enemies abroad only to lose in the end unless it liquidates its pro-fascist enemies at home.



Signal Corps Photo

U. S. Army Engineers bridging a fast flowing river in New Guinea. It is a difficult and hazardous job. Here, the breakwater form, completed and attached to steel cables, is being put in alignment by Caterpillar tractors on the shore. After reaching position it is filled with concrete to form the main support of a permanent wood and concrete bridge. What would they do without the engineers?



Official OWI Photo by Paul

And, what would the engineers do without skilled personnel on the home front to back them up? Building assault boats for the U. S. Marine Corps. Mass production methods used in the men's clothing industry are adapted to war. Patterns are laid out and skilled cutters guiding electric knives cut out many patterns simultaneously. Each cutter controls power equivalent to scores of invisible men.



Official Photo U. S. Air Forces

is one of Uncle's latest air fighters, the P-51, Mustang. It is rated at over 400 miles per hour in level flight with a ceiling of about 40,000 feet and a tactical radius of 600 miles. The cockpit enclosure of the 'teardrop' design with 360 degrees of visibility. The entire top can be rolled back at night, eliminating reflections from the instrument panel. Its high ceiling shows it to be turbosupercharged. The Mustang approaches the probable speed limit of propeller driven planes.



Photo: Courtesy General Electric Company

There's something a good deal faster, the Bell P-59A jet plane. Maintenance and repair takes less than with the time, labor and tools necessary with a reciprocating motor. Four men can pull both engines of a plane and install new ones in a day. Eleven bolts hold the entire assembly on the plane. Jet engines require no warming up. A minute after the starter button is pressed the plane can take off. The motor has blasted an awful hole in the skill and man-hours of the airplane mechanic.



Official U. S. Navy Photog

An interior view of the radio and pilot compartment in a PBM Mariner, Navy patrol bomber. Note maze of dials and instruments. Most of the technology and skill represented here was almost tot unknown 40 years ago. It is a product of the Power Age and requires training, knowledge and pre control. The whole setup is highly developed, complex and tenuous. Yes, tenuous is the word, for stability depends upon exact adjustment of coordinated factors. Any moron can ruin a fine watch.



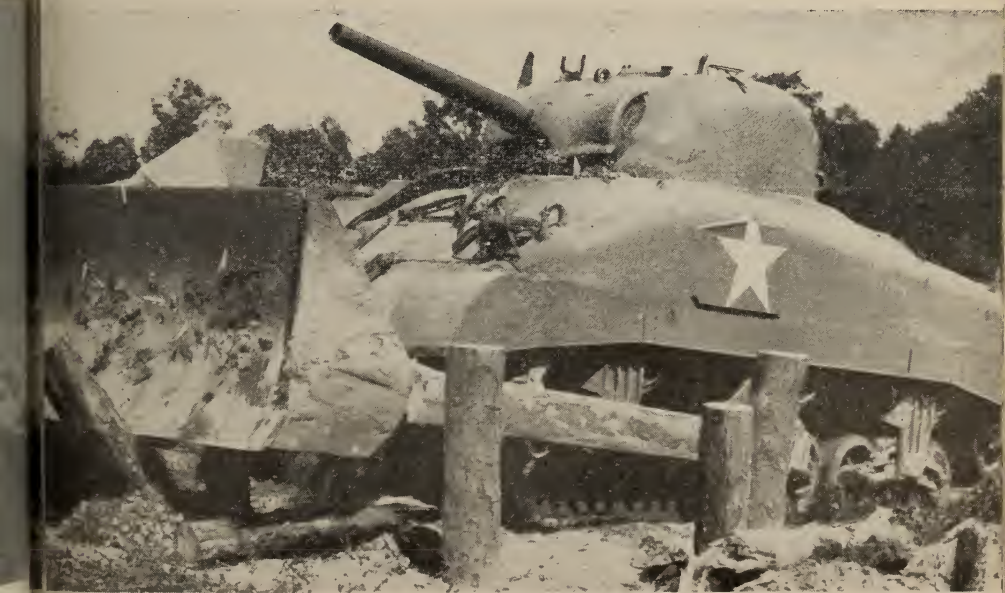
Official Photo U. S. Air I

See what we mean? Intricate highly developed technology is easy to destroy. Here, Nazi flak reached a Martin B-26 Marauder of the U. S. Army's 8th Air Force. The formation is somewhere France. Flame billowed out from a direct hit and nearly enveloped one of the other planes. The bor was destroyed and crashed while burning. All that fine machinery, technology, skill and personnel ru in an instant. Mechanisms of the Power Age need constant and precise control.



Official Signal Corps Photo

S. Army adopts 9-lb. 'baby.' The M3 submachine gun takes .45 caliber pistol ammunition, holds 30 rounds and fires either one shot at a time or at the rate of 450 a minute. Fabricated mainly from stamped metal and screw machine parts no tools are needed to take it apart. It is completely enclosed, oil-proof and has no external moving parts. The stock is the ramrod also. The M3 is used as a hip or shoulder gun. After 49,600 rounds of test firing its accuracy improved. Some baby!



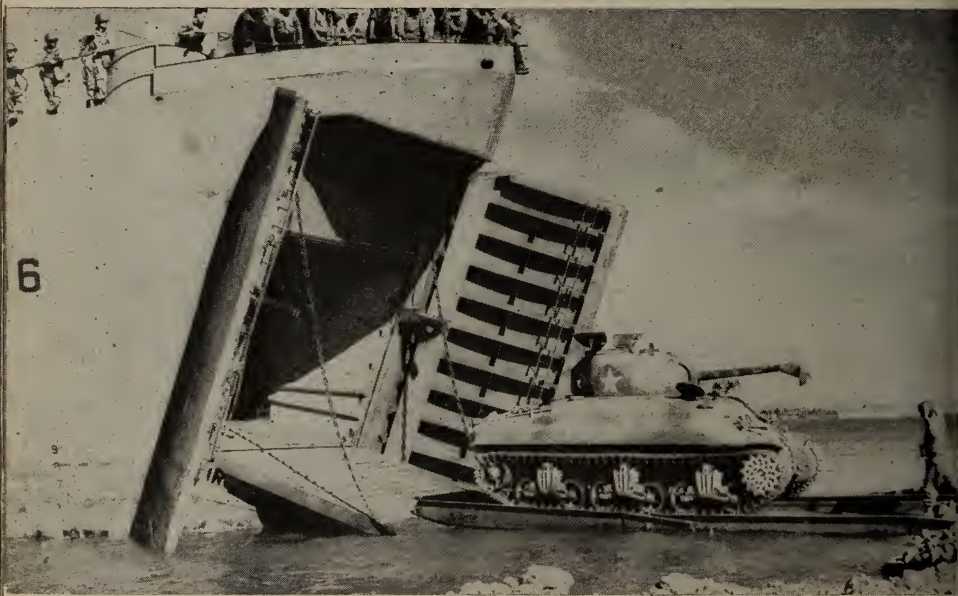
Official U. S. Army Photo

Now comes the Tankdozer, a medium Sherman mounted with a bulldozer blade. It combines impaired fire power with ability to move earth and great weight and momentum. It breaks through obstacles either by impact of brute force or by building ramps over them. The bulldozer blade assembly can be jettisoned in 10 seconds. Its work power is equal to a heavy tractor. What the heck's next?



Signal Corps Photo

Saipan was bought at a cost of more than 3000 American casualties. But the Japs paid off in heavy odds. Here two American soldiers are probing the ruins of a demolished Jap sugar refinery, blasted away by aerial bombs and naval gunfire... Notice the narrow gauge railroad. It's symptomatic of the narrow gauge technology of Japan as compared to the wide gauge technology of America, so to speak.



Official U. S. Navy Photo

War opens the door wide. Here's a closeup view of the LST (landing-ship-tank). This is a beautiful illustration of naval technology. Before the war there was no such a boat as an LST. Neither did some designer dream it up overnight to meet the emergency. The necessities of amphibious warfare dictated the LST. The designer must conform to the physical needs and limitations. Will we ever learn to avoid social problems with this object lesson in view? The principle is the same.



Official U. S. Army Photo

Caterpillar D-8 bulldozer with armored cab, filling up a shell crater. These are used in close proximity to actual fighting. Opinions may have held that armored cabs were an unnecessary luxury for bulldozer operators. Perhaps many had to die before the facts dictated otherwise. In war or postwar America's problem is the same. Opinions are becoming too costly a luxury. Observation, research and experiment must replace a priori reason, logic and discussion. Let's find the facts. Let them decide.



Photo: Courtesy General Motors Corporation

Technology begins with measurement and planning and involves coordination. The draftsmen shown are working on some specific part of a coordinated design for production. Not so with our national effort as a whole. There are millions of conflicting plans for details but no master plan to orchestrate them. This is the greatest weakness of America. In resources, energy and technology we are tops.



Official Photo U. S. Air Force
 Army Engineers now erect this temporary steel span called a Bailey Bridge, named after Donald Bailey, an English engineer. It is made up of interchangeable parts held together by pins, lugs, bolts, clamps and turnbuckles. It's built on rollers, then pushed out over the gap and straddled into place. A 180 foot span can be bridged in 7 hours. It will carry the heaviest traffic. Engineers to the rescue.



U. S. Army Signal Corps
 In the steaming jungles of the tropics; on the broad expanse of the Pacific; in Europe; and in the Arctic American soldiers carry the colorful symbol of their motherland. In the midst of a driving snow storm in Iceland, the Stars and Stripes waves in blending harmony with the slanting storm. Sgt. Lew Zerke stands in front of the color guard to receive the Legion of Merit Medal from Lieut. Gen. W. S. Key, Commanding General, U. S. Army Forces in Iceland.

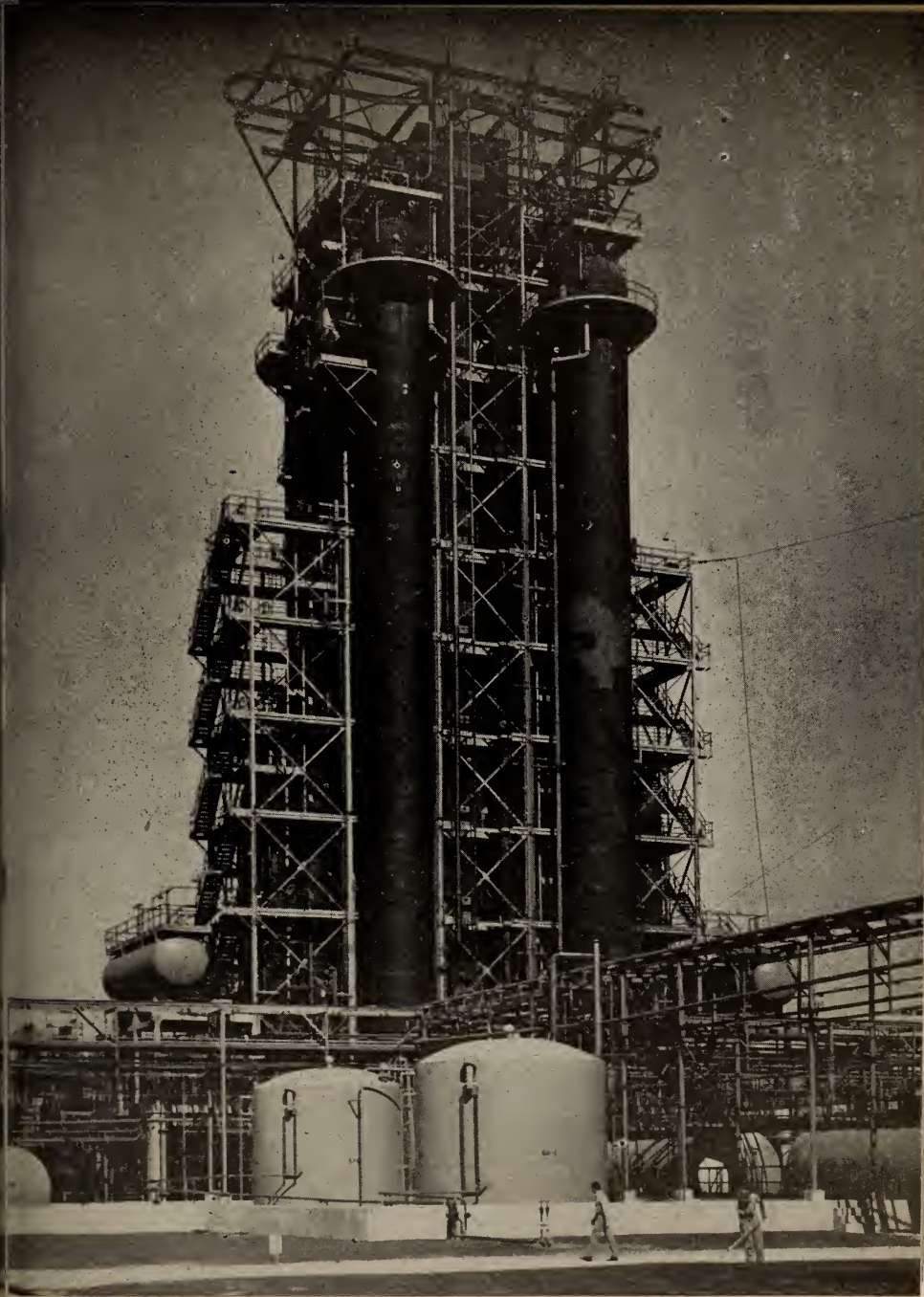


Photo: Courtesy Monsanto Chemical Co.

reaching into the sky 20 stories above ground in this distillation tower of a Styrene plant at Texas City, Texas. Styrene is one of the raw materials used in Buna-S synthetic rubber. The plant went into production seven days less than a year from the time construction was started. Taxpayers' money financed it. We'll get it after the war at a nice discount? Who cares? The plant's the thing.



Signal Corps P

Notice the background painted out of this picture for military reasons. The most important part remaining here is a 72 ton locomotive being unloaded by a floating crane, at Casablanca, French Morocco. It would be easier to destroy the locomotive than the crane. It is a far more complex mechanism. So also is our social system today far more complex than that of 40 years ago. Get the idea? Our social system, it requires precise control for stability. The Price System promotes instability.



Photo: Courtesy The Milwaukee Journal

'THE FOXES HAVE HOLES AND THE BIRDS HAVE NESTS—'

In this small tent, pitched along Mud Creek in Milwaukee, Wisconsin, a family of four lived for a week until the law stepped in. The family, Mr. and Mrs. Ronald Graff, 26 and 23 years old, respectively, and their children, a 3 year old girl and a 15 month old boy, had been sleeping on the bare ground without blankets. Having no heat the family subsisted on bakery goods, canned foods and milk.

This situation came to the attention of the law through Earl Crawford and his two sons who were out seeking fishing worms. Their attention was attracted by the cries of a baby issuing from the tent. They looked in and saw the baby lying on the ground, alone in the tent and crying.

Crawford reported to the Sheriff's office, and Deputies Jack Axtell and Roy Stark investigated. By that time Mrs. Graff and the 3 year old girl had returned from a shopping errand. She informed the deputies that her husband had bought the tent a week ago when they could not find a place to rent after having lived with relatives. Mrs. Graff told the deputies that her husband was a **WELDER IN A WAR PLANT**.

'The law in its majestic equality forbids the rich as well as the poor to sleep under bridges, to beg in the streets and to steal bread.'

Anatole France.

From the Camera's Eyevew

The Real Story of America

'When My Ship Comes In'

The average American pursuing his average way from one year's end to another has little conception of the world of reality around him. Like a fish in the ocean, he is immersed in the artificial ideologies of the social structure of which he is a part. He plods along his well-worn rut, working, eating, sleeping, mating and chasing after phony recreation. A host of little worries, problems and obligations are snapping at his heels every day. His nose is on somebody else's grindstone all the time.

Occasionally he seeks surcease from his sham existence in the corner tavern where any man may become a big shot to himself for a time, and for a price. Or else he may indulge in the vicarious heroisms of Hollywood art, at the movies, or the 99-44/100 percent pure drivels of radio dramas where, in both cases, 'right' always defeats 'wrong' and virtue is triumphant in the end. This is supposed to constitute recreation and escape from reality. He has been told that it is good for him.

Somehow or other, though, he never finds complete satisfaction in his counterfeit existence. Ever present in the average American is a psychological longing that finds expression in the words of a popular song: 'Somewhere over the rainbow, way up high, there's a land that I heard of, once in a lullaby.' This yearning visualizes a far-off land of happiness, where all wrongs will be righted, all dreams will come true and his very own ship will come in, at long last.

Escape Into Reality

It is not physically possible to escape from reality, it is always present. One can only escape from one artificiality to another one with a different odor. Reality always follows and must be reckoned with in the end. That's what is dogging the average American. So he chases from one fraud to another while all around him, pressing in from all sides, are the physical realities by which it is possible for him and all other citizens to live and prosper. Indeed, these physical realities are becoming so insistent in modern America that it is becoming more and more difficult to deny them.

North America has progressed into an order of magnitude and complexity of operations in her civilization wherein the dominating forces behind the superficial social, political and economic facade are the laws of thermodynamics and the impact of technology. It is only by physical facts that we can live and prosper in the Power Age and these facts require very little discussion because they can be determined by measurement. Being dominated by physical laws this culture of the Power Age must also be directed by physical laws.

The superficial, tantalizing existence of the average American today is traceable to the futility of endeavoring to fit all social problems into the Procrustean bed of an obsolete political ideology. The facts which determine our existence cannot be ascertained by counting noses to get a consensus, when decimal points are necessary. We have outgrown the old standards. We are trying vainly to escape into the past which no longer exists; while the future is rushing at us with potentialities which beggar description.

In order to understand the realities of living in the Power Age, it is necessary to know the physical history of America, the story of the impact of science and technology upon the social structure and the resulting instability produced thereby, together with the irreversible trend of physical events following that impact. It is not enough to know the technical aspects of science; millions are familiar with that now. One must also grasp the social aspects of science.

This fact is understood by only a relatively few Americans today and there is only one Organization set up to propagate knowledge of this type. That Organization is **TECHNOCRACY INC.** It is dedicated to a more efficient design of social and industrial operations. For our picture story this time let's escape into reality and pay a visit to the **DETROIT SECTION OF TECHNOCRACY INC., AT 9108 WOODWARD AVE.** There, on the walls, for all who care to see, is the Real Story of America in the form of maps, charts and mural paintings.

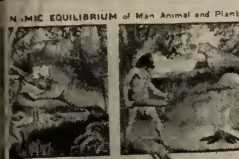
ECOLOGIC EQUILIBRIUM of Man Animal and Plant



ECOLOGIC EQUILIBRIUM of Man Animal and Plant

1. HUNTING WITH BOW AND ARROW
2. MORE FOOD AND GREATER POPULATION

ECOLOGIC EQUILIBRIUM of Man Animal and Plant



ECOLOGIC EQUILIBRIUM of Man Animal and Plant

1. FIRE AS A WEAPON
2. MORE FOOD AND GREATER POPULATION

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THE POSTULATES OF SCIENCE

A POSTULATE PARTAKES OF THE NATURE OF A FACT BUT DIFFERS FROM A FACT IN THAT THE OBSERVATIONS SUPPORTING IT ARE NOT CONFIRMABLE

1st POSTULATE
THE EXTERIOR WORLD ACTUALLY IS

2nd POSTULATE
NATURE IS UNIFORM

3rd POSTULATE
THERE ARE SYMBOLS IN THE MIND WHICH STAND FOR EVENTS AND THINGS IN THE EXTERIOR WORLD

INTRODUCTION TO SCIENCE

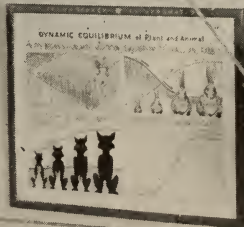
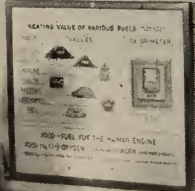
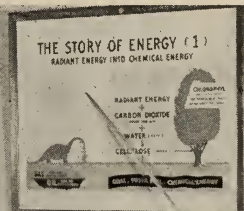
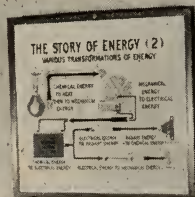
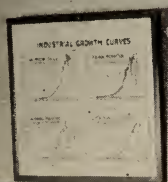
SCIENCE
THE METHOD OF THE DETERMINATION OF THE MOST PROBABLE

A FACT
A CLOSE AGREEMENT OF A SERIES OF OBSERVATIONS OF THE SAME PHENOMENON - All observations must be susceptible of confirmation

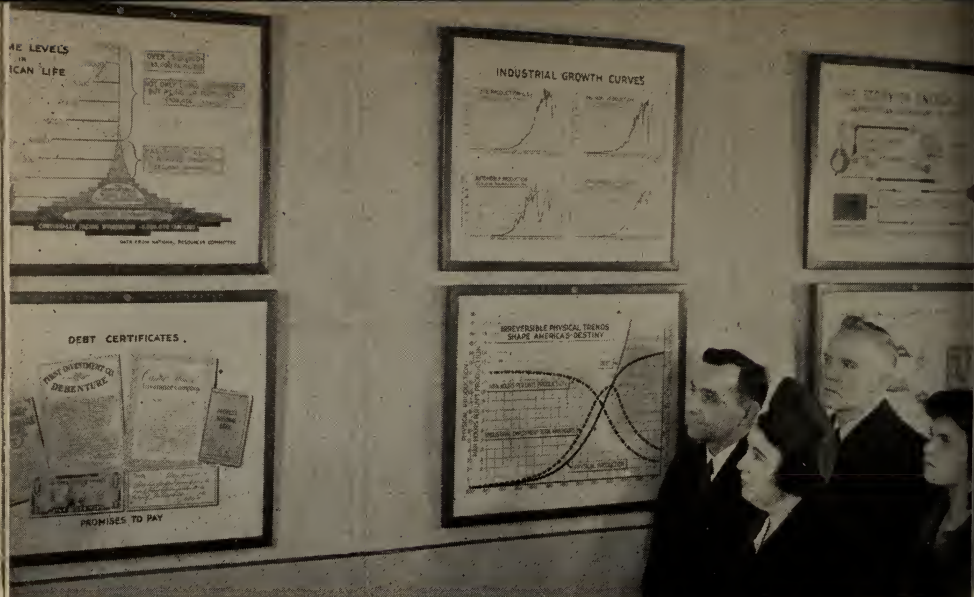
A DEFINITION
AN AGREEMENT - wholly arbitrary in character - AMONG MEN



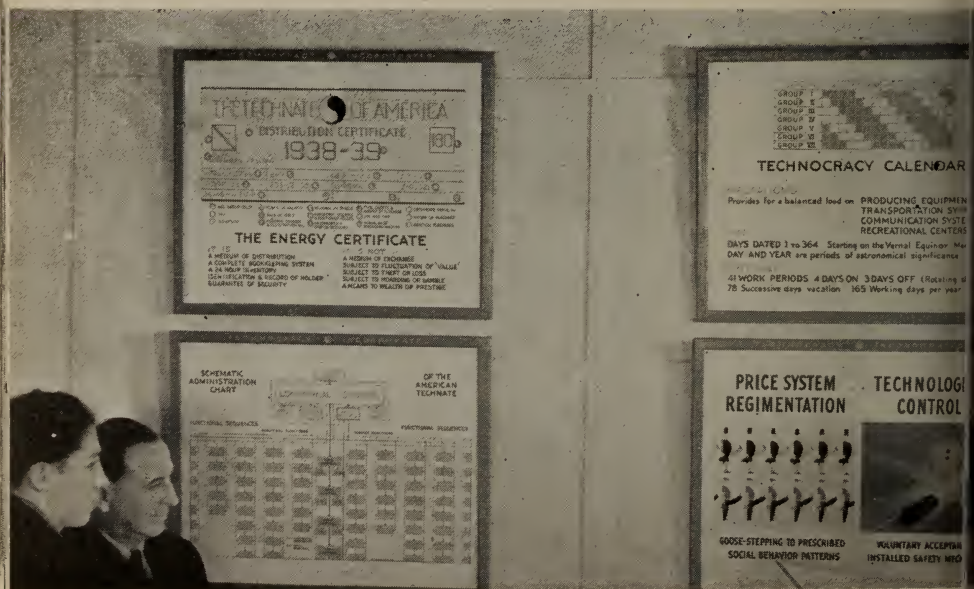
Science shows the correct way to approach the social problem. First comes the three basic postulates of science, then the nature of Fact and Definition and the scientific method. This is elementary and indispensable. Man's progression from the savage state can be measured by his rate of energy conversion. Naked and unarmed, he was prey for wild animals. With fire and club he could hold his ground. With domestic animals, windmills, and bow and arrow he became more secure and dominating.



There is a perpetual struggle going on between all plant and animal life for a larger share of the Sun's energy. This creates a state of natural balance, i.e., dynamic equilibrium. Any species that captures more energy disturbs this balance in its favor. All plant and animal life pursues a fundamental 'S' shaped growth curve. Energy is basic to all life; it can be changed into many forms for use and it can be measured. The law of energy determinants is immutable.



Industrial growth curves follow the same 'S' shape as growth curves in the plant and animal world, starting slowly, accelerating to a compound interest rate and leveling off. Then they may remain constant, decline to a lower level or to zero. The interference control over higher industrial growth is the mechanism of the Price System. Goods cannot be produced except by creating ever more debt. This is already a part of history in America. Notice the chart of Income Levels in American life.



Illustrated here are the Energy Certificate, a non-debt creating medium of distribution; the Technocracy calendar, necessary to attain a balanced load system of production; and the Schematic Administration Chart for technological control. All this is a scientific design to tip the factors of dynamic equilibrium in our favor. America must either go up or down. The design involves voluntary acceptance of scientific controls, because social change must be accomplished peacefully.

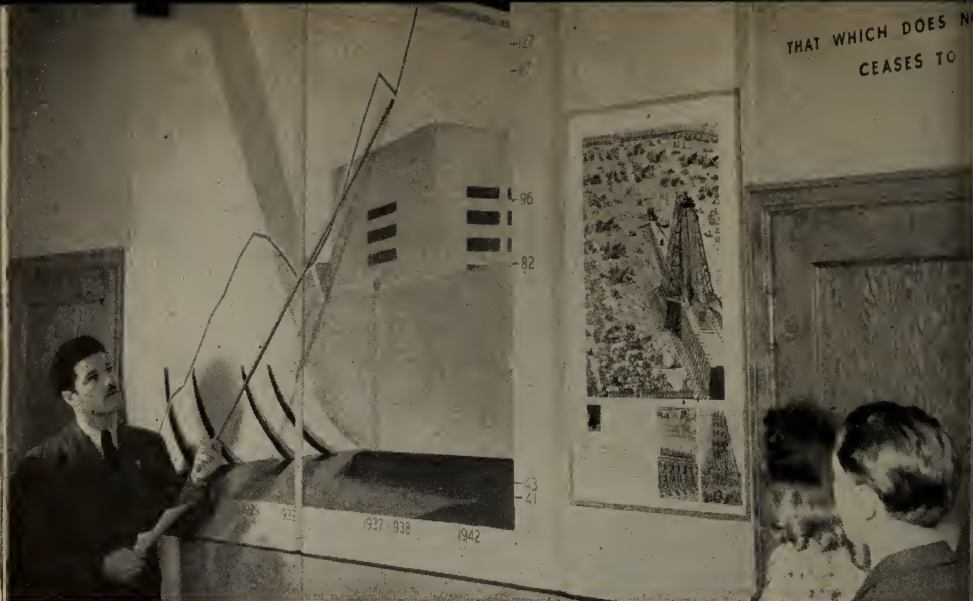


to turbines added to the skill of 38 men equals the labor power of 3,168,000 men. Doesn't make sense? Yes it does. The social implication involved is food on the average man's table, shelter for him and his family against the elements and security for his old age. He had better learn its meaning. Now is a blueprint of the Continental power system. To its right is a cross-sectional view of the underground cable for transmitting 1,000,000 volts D.C., 3,000 miles, with only 10 percent line loss.

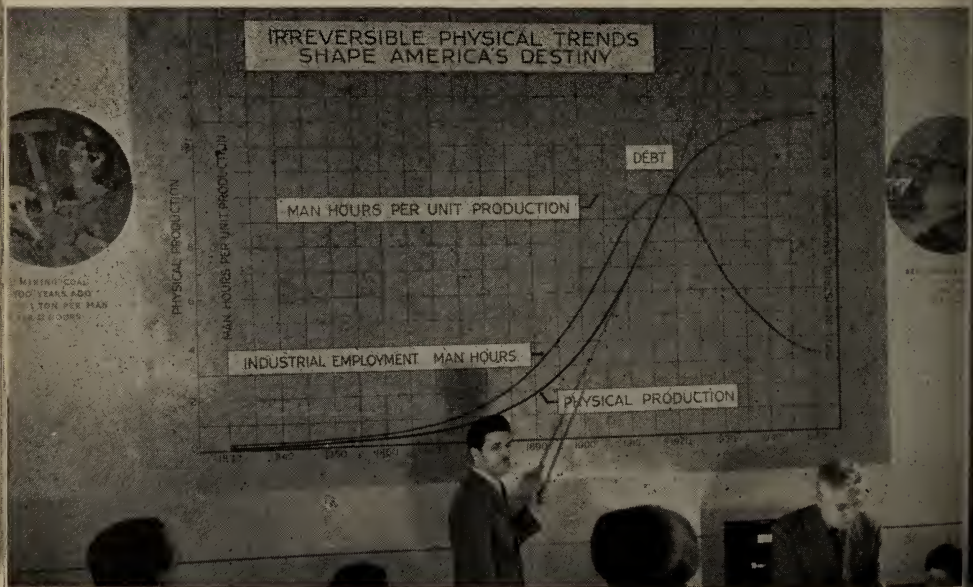


Millions of years of sedimentation deposited on America's surface 9 inches of fertile top soil. Every year 10,000,000 tons of it is washed into the oceans. Out of 1,903,576,620 acres, 41.5 percent are seriously eroded, 14.8 percent severely so, 7.6 percent useless and only 36.1 percent unaffected. One-third of America's resources have been literally sold down its rivers. Price System methods lead to erosion and waste. Reforestation and thousands of dams are necessary to halt this waste.

THAT WHICH DOES NOT
CEASES TO



The greatest engineering feat of the middle Ages was the moving of a 75 ton obelisk 800 feet the Circus of Nero to St. Peter's Square in Rome. It required 907 men and 75 horses 18 months the job. Today a crane operated by one man can move 75 tons 800 feet in 10 minutes. In October the daily production of electric power in the U. S. was almost 700,000,000 kilo-watt hours. Multiplied by 13 and you get the number of men it takes to equal it. This is the Power Age. Get the idea?



One man could produce one ton of coal in twelve hours 100 years ago. Today in a modern strip mine man can produce 25 tons of coal in 8 hours. Notice the 'S' shaped curves on this basic chart. Notice how total man-hours and man-hours per unit are declining toward zero production has risen to a high peak. The only way to produce more is to work less. These curves hold the answer to America's problems.

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Overall view of mural paintings on north wall of the meeting room. They were designed and painted by Technocrats. For comparison with better known murals in Detroit, see JANUARY-FEBRUARY GREAT LAKES TECHNOCRAT, page 43. The North American Continent shown comprises 19 percent of the world's land area. It has the full range of climatic conditions and the lion's share of the world's natural re-

sources. Racially, it is the most homogeneous area on earth; geographically the most united; industrially the most advanced. It has over 2/3rds of the world's engineers and the largest body of skilled personnel, yet contains only 9 percent of the World's population. North America is one organic and functional unit. Abundance is possible on this Continent now.

ALL PLANNING

THE MINISTERS

Technocracy proposes the application of Science to this Continental Area. Since America is the richest loot in all history, it is necessary to consolidate this area: vastly expand our technology; build the world's most powerful Armed Force; construct Continental super-highways; dig Continental inland waterways; install a Continental power transmission system; and provide gigantic defense bases

around its perimeter. From the International Date Line on the West to a boundary line in the East reaching from the tip of French Guiana to Greenland is the minimum area for the maximum defense of America. Who shall say that this great motherland of the Power Age needs less defense? This proposal is the greatest project ever conceived by the mind of man.

mother
American
news no to
campaign
school



Photo: Courtesy Look Magazine

He is another part of our land still in the making. Young America salutes the flag. This is the traditional American salute. It was used on this Continent by the Indians before the white men arrived. History shows no trace of it in the old world. Technocracy Inc. was the first organization to initiate and carry on a campaign against the outstretched right arm fascist-type salute which had been introduced into American schools by native fascists. Fascism is contrary to the destiny of America.



Techphoto by ACS R.D.

No picture story of the old and the new in America would be complete unless it showed some of the activities of Technocracy Sections. Here is a lineup of Technocracy Gray cars at Cleveland, Ohio. Technocracy is the only social movement on this continent that predicts the form of the North America to come, the facts presently at hand. At the same time Technocracy portends disaster for this Continent unless the facts are recognized. Impending social change parades its causes before.



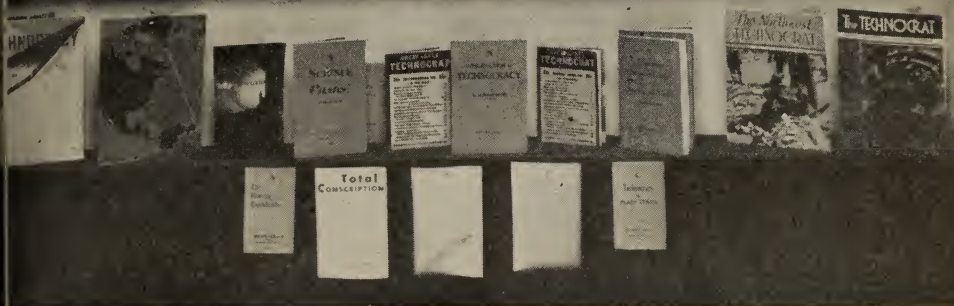
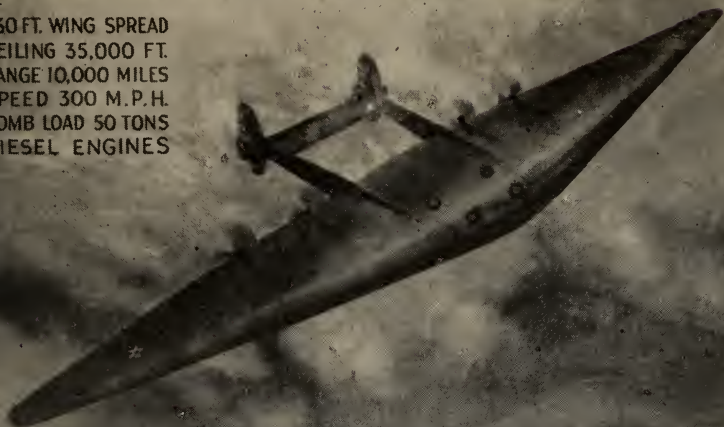
Akron, Ohio. Jan. 17, 1943

Techphoto--8

Here's another type of activity Technocracy engages in, called symbolization. Notice the large Technocracy, unknown until 10 years ago, has now become a household word in America. It may not long until the trend of events will make it a household necessity also. Its research material will also be available for use when our social muddle becomes too deep to muddle through any more.

TECHNOCRACY'S FLYING WING

330 FT. WING SPREAD
CEILING 35,000 FT.
RANGE 10,000 MILES
SPEED 300 M.P.H.
BOMB LOAD 50 TONS
DIESEL ENGINES



Techphoto by J. R. Rushing

IDEAS ARE COMMON PROPERTY, HELP YOURSELF

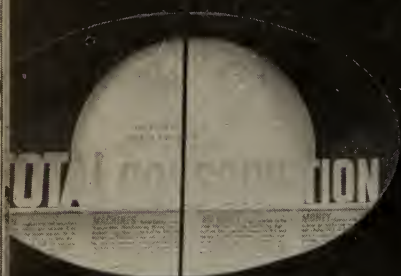
Technocracy has a large and growing volume of literature. This includes four continentally circulated magazines, numerous pamphlets and a Study Course Book. The body of thought expressed therein cannot be obtained at any school or college. It's scientific, new, factual and unanswerable. The above picture shows a window display installed in one of a chain of ten cent stores at East Orange, N. J. by Technocrat J. R. Rushing. A supply of literature is available inside the store.

Technocracy is an all-American organization. It salutes America's technology and her gallant citizens in the armed forces who are applying it against fascism abroad. Total Conscription of Men, Machines, Materiel and Money With National Service From All and Profits to None will make their job easier by intensifying the technology of war; and also insure all Americans against the perilous post-war period ahead.

DEI
#6342



TECHNOCRACY INC.



TECHNOCRACY IS AN OPEN BOOK

As night settles over America's greatest industrial city, the fluorescent lights blaze out bravely at TECHNOCRACY Headquarters. Until the early morning hours Technocrats work and plan for America's defense and future destiny. The social analysis of Technocracy is irrefutable. Its synthesis of a modernized social system is buttressed by the best scientific evidence available. If Technocracy is 100 percent wrong, then the worst that can be said about it is that it never did any one any harm. But, if it is correct then God help America, for no other power will be able to if her citizens do not adopt scientific methods of control.

SINCE JULY 1940, 18 MONTHS BEFORE THE JAPS BOMBED PEARL HARBOR, THE SOCIAL PROGRAM OF TECHNOCRACY HAS BEEN PUT ON THE SHELF. No nation can achieve social changes internally unless it is first free from outside aggression and inside treason. Technocracy warned against the rise of World Fascism as early as 1935, and spoke up repeatedly in the years that followed.

In August 1938, Technocracy presented specifications for the Army, Navy, and Airforce to repel any attempted attack from Atlantic or Pacific, and charged that the military budget of the United States was inadequate. In September 1939, Technocracy demanded the development of a Continental strategy and the planned generalship of all Continental operations for the security of America. In home defense activities, Technocracy has participated to the full. Our Section Headquarters have been used for Selective Service registrations, for first aid classes, and air raid warden work. Technocracy's mobile sound units are used by police and fire departments. On December 7, 1941, Howard Scott, Director-in-Chief of Technocracy sent a telegram to President Roosevelt in the name of the Organization placing the entire personnel and equipment of Technocracy Inc. at the disposal of the Commander-in-Chief and pledging the unqualified support of Technocracy to the Administration's war effort.

SINCE 18 MONTHS BEFORE THIS WAR TECHNOCRACY HAS BEEN ADVOCATING TOTAL CONSCRIPTION. The trend of events is moving irresistibly toward the perilous postwar period ahead. Total Conscription will be even more necessary than now. If we insist on winning this war at the high cost of Price System methods, we will be in great danger of losing the peace and sacrificing the greater destiny of America to pro-fascism at home unless we adopt Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None. Total Conscription is the key to America's future. How about it, Mr. and Mr. America? INVESTIGATE TECHNOCRACY.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens, Asiatics and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

**Great Lakes Technocrat,
843 Belmont Avenue,
Chicago 14, Illinois**

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After Victory What?

Defeating fascism abroad:

Will not defeat North America's fascist enemies at home;
Nor stop the wastage of North America's natural resources;
Nor halt the creation of new mountains of debt;
Nor check the trend of technological disemployment;
Nor prevent a new and greater depression;
Nor end sabotage of the General Welfare by 'Free Enterprise';
Nor release technology from Price System interferences;
Nor solve North America's primary problem of distribution;
Nor realize the greater destiny of North America.

Defeating fascism abroad is only the beginning of the great task that faces North America. Unless we liquidate our fascist enemies at home we will have waged war against their facsimiles abroad in vain. North America must do the whole job that faces this Continent or go down to defeat against the forces of social chaos.

North America must avert the perilous postwar period ahead; arrest the processes of social instability; provide equal opportunity for all; promote individual security; underwrite a high standard of living; and institute a greater concept of citizenship on the basis of physical democracy.

Technocracy's Victory Program of Total Conscription of Men, Machines, Materiel and Money With National Service From All and Profits to None is the design of Continental operations now called for by the trend of events. Total Conscription can do the whole job.

INVESTIGATE TECHNOCRACY

GREAT LAKES TECHNOCRAT

25c

Volume III

Number 7

25c

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Illustrating the Futility of Price System Methods of Operation; Interpreting the Trend of Events from the Social Aspects of Science; and Presenting the Specifications for Total Mobilization for Peace!

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Technocracy,
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cents, no subscriptions.

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TECHNOCRACY DIGEST

625 W. Pender Street

Vancouver, B. C., Canada

Social Implications of the Kilowatt Hour

Arithmetical to Geometrical

By Ralph W. Herring

The current flowing in any circuit is directly proportional to the electromotive force and inversely proportional to the total resistance of the circuit. (Ohm's Law)

Therefore, current (amperes) = $\frac{\text{electromotive force (voltage)}}{\text{circuit resistance (Ohmage)}}$ Algebrai-

cally, this is stated as $I = \frac{E}{R}$. The current is equal to the pressure, divided by the resistance.

Translating this into social terms, Ohm's Law can be stated thus: $I = \frac{E}{R}$ where I is the current of social change, E is the impact of technology and R is human inertia.

Therefore, social change = $\frac{\text{pressure of technology}}{\text{resistance of human inertia}}$ Social change

proceeds at a rate proportional to the pressure of technology divided by the resistance of human inertia.

The impact of technology is increasing; the resistance of human inertia is decreasing. Ergo, the amperage of social change mounts ever higher. It won't be long now!

The First Step Is Observation

FOR all but 169 years of the 7,000 years of recorded history and for countless centuries prior to that, man struggled with his environment, eking out an existence that was little, if any, above that of the wild animals who were at once his food, his competitors for food and his deadly enemies. He fought this environment with the strength of his own muscles save for a few centuries just past during which he domesticated animals, contrived sails and a few crude water wheels and windmills.

Save for these few centuries if he succeeded in sustaining life, he did so by sheer force of his own muscle power, plus whatever cunning he could contrive. The club, the thrown stone, the spear, the bow and arrow, the battering ram, and the catapult came laboriously and slowly, impress-

ing him forcefully with the fundamental principle of them all, namely, that he with his own muscle power must supply them all with the energy they required to make them effective.

In this respect he differed from the other animals only in the greater range of effectiveness he was able to impart to his muscle power by means of his crude contrivances. It is true that this enabled him to sustain life more effectively. It enabled him frequently to render some attacking wild beast horse-combat before the beast was in a position to effectively bring into play its superior muscle power; or to strike down some prospective prey beyond the actual reach of his arms, but his status never permitted him to forget for a moment that his life depended solely and absolutely upon his own exertions.

The net result of his growing mental superiority over the other animals,

as evidenced by his contrivances to make his own energy more effective, was a longer life expectancy and an increased population, indoctrinated with the concept of the importance of human labor in the process of obtaining the means of sustaining life. It was along about this time that man got his first lesson in cooperative effort. It may have been the discovery that two human beings could more effectively fight off an attacking wild beast or that two could drag to the cave a carcass too large for one individual to manage alone, but he was still impressed with the importance of his own energy.

Nevertheless, cooperation was a great advantage and led to the development of the family group around the cave; the tribe, and with the increasing scarcity of food supply resulting from his more effective methods of procuring food, to the nomadic tribes and migrant hordes. Finally, as the hunting became progressively less adequate, he finally settled down to a more or less stabilized society, based on agriculture.

Throughout all this slow and painful upward trek of the human race, the most impressive thing was the necessity for human toil. Examination of the record of human progress which we have thus briefly outlined here leads to the following observations:

1. That energy was the dominant factor in human progress in the period outlined.
2. That this dominance was fundamental and absolute. (No energy, no food; no defense—death)
3. That the progress made was either the result of
 - (a) An increasing rate of energy expenditure, or
 - (b) an increase in the effectiveness of the application of the available energy to

the desired ends, or

(c) a combination of the two.

At this point, the engineer would want to begin taking measurements. He would want to know something of these rates of energy conversion in terms of scalar quantities. Being neither philosopher, politician, nor business man, the engineer would adopt the scientific method.

The Second Step Is Research

And so, like C. M. Ripley of the General Electric Company, the engineer proceeded to find out about the capacity of man to convert energy into work. Ripley started out, as all competent engineers do, by engaging in research to find out what was already known.

He found that engineers throughout the centuries and in many lands, have measured, in foot-pounds or other units, the work that all kinds of laborers can do in one day. He found that they have done it in England, Scotland, France, Egypt, and China. They have done it in Germany, Russia, Italy, Greece, Sweden and Norway, and they have done it in the United States and Canada. Wherever engineers have carried out their projects, they have made these measurements. These measurements include lifting weights by hand, by hod, by wheelbarrow, by rope and by pulley; also turning cranks, shoveling, towing canal boats, hammering, sawing and pushing on a capstan.

Of all the engineering reports examined, they were all unanimous in one respect, namely, that, regardless of race and climate, in Orient or Occident, in this century or the last, not one engineer ever found any man, either laborer or athlete, that did the equal of 1 kilowatt-hour or 2,655, 200 foot pounds of work in a day

and some men worked as much as ten and even twelve hours per day, as in China and Egypt. In fact, the day's work averaged only 28 percent of one kilowatt-hour, or only 280 watthours. Far less than the 746 watthours in a horsepower hour.

The Third Step Is Experiment

The engineer was not satisfied with this. He checked the reports by another scientific method. He experimented. He made measurements of his own. He built a stationary bicycle that drove an electric generator. He pedalled it hard for one minute and was breathless, and found that the electric energy he had generated was worth 1/40 of a cent, or the price of one safety match. As a converter of energy, he wasn't so hot; but what about a stronger man?

He took it to Madison Square Garden and had a champion six-day bicycle racer pedal it for one minute in a desperate sprint. The meter showed .0018 kw. hr. If he and his teammate could have kept up this desperate sprint for six days and nights, they would together have generated 15.552 kw. hr. of electricity, worth about 78 cents, a very poor showing for a week's work for two famous athletes.

At the Better Homes' Show in Billings, Montana, 213 people rode this machine until they were tired and their combined work was 2½ kw. hrs., worth 10 cents.

Finally, the engineer set up a hand-driven generator operated by a crank. It was specially built to get the highest possible efficiency. The capacity was 60 watts. Few men turned it more than a minute. The strongest man that could be located in Schenectady, a former pugilist, was offered \$12 an hour for as long as he could keep the 60 watts of lamps burning by turning the crank. He quit, exhausted in

just 13 minutes, and when reminded that he was making \$96 a day and asked why he quit, he gasped, 'The money wasn't worth the work.' He had exhausted himself in converting the energy equivalent of 1.3 percent of one kilowatt-hour.

Research and experiment had shown that what workmen could do varied from 9 watts in one of the hod-carrying jobs, up to 72 watts rowing and pushing on a capstan. The average power which a man can exert all day is 35 watts.

Thus we find that throughout all these countless centuries the energy available for the procurement of the necessities of life was of the order of 1/20 horsepower per capita, and the emphasis on human energy was unbroken, save for a single event, the discovery of fire.

Social Change Began With Fire

Here, man had for the first time a means of converting energy for his own use without first eating food, converting it into chemical energy and then converting the chemical energy into work through the agency of his muscles. Today, it is this ability to convert extraneous energy (energy from coal, oil, gas, wind, and falling water) to his own uses that distinguishes man, more than any other thing, from the other animals.

The discovery of fire gave man not only heat, it also gave him a measure of additional protection from wild beasts. It enabled him to live in more rigorous climates, thus spreading his tribe over a larger geographical area. It cooked his food and gave him added comfort which resulted in an increased population, but it did not relieve him from toil.

During all these thousands of years, the energy input into human society was limited to the low order of magni-

tude of man-power. Any increase in energy input was predicated upon a corresponding increase in human employment. Man lived in an environment of scarcity. Surpluses were non-existent. The social system was in a state of equilibrium. It was stable, and almost static.

A graph representing the physical state of the social mechanism throughout this period would be an almost perfectly smooth flat line, curving just perceptibly upward as man settled down into his agrarian society, broken only by the slight upward movement which resulted from the impact of increased energy conversion following the discovery of fire. (*Ed. Note: See chart in middle of book*)

This was the first indication that a change in the rate of converting energy might have an effect upon the stability of any given social mechanism. It still remained in dynamic equilibrium with its physical environment. There were none of those forewarners of trouble, so familiar to engineers, uncontrolled oscillations.

Enter The Price System

With the greater assurance of a food supply which came with the establishment of a society based on agriculture, man began to specialize in the techniques of producing a living. The introduction of the concept of exchange was a natural outcome of specialization of labor, a physical factor. Since virtually all production could be accounted for as the result of human toil, a system of commodity evaluation based on scarcity and man-hours of labor grew up.

During this state of society, any increase in production necessitated a corresponding increase in man-hours. As long as man-hours were the chief means of production, this concept was valid. Thus, it was possible to effect a system of exchange on the basis of

man-hours of labor for purchasing power, plus the factor of scarcity.

Concurrently with this, a folklore and religion developed based upon the apparent virtues of human toil. This concept has dogged the human race to this day, to political and economic crisis, to the very brink of disaster.

This system of effecting exchange on the basis of commodity evaluation did not at this time alter the relationship between man-hours per unit of production and total production. It brought no increase in the rate of energy conversion. The philosophy of 'Earn thy living by the sweat of thy brow' and 'Work hard and success will surely follow' grew up on the assumption that this was a permanent state. Alas, man's environment is dynamic. Change itself is the sole possessor of the characteristic of permanency.

We have made the mistake of assuming that it is a natural law that the creation of real wealth bears a fixed relation to human toil, whereas in reality, *physical wealth is created by the performance of work regardless of the source of the energy involved.*

The hour of destiny arrived in the year 1776. It was not July 4, 1776, but March 8. On that date, the firm of Boulton and Watt tested the first practical single-acting steam engine in pumping water out of a coal mine, and it worked.

For 7,000 years previous to that date the soldiers of Alaric and Attila, of Genghis Khan and Hannibal, of Alexander the Great and Charlemagne, and all the other great and near great, conquered and reconquered the known world and passed on to their reward, leaving both victor and vanquished as they had found them, with their measly 35 watt capacity. The tools of social change, despite the pomp and fanfare and the spilling of human blood, were not at hand.

On March 8, 1776, the firm of Boulton and Watt wrote the death sentence of the Price System in America. Technology, the tool of social change, was at hand. The means of converting energy from fossil fuels had been discovered.

Enter North America

Given an area large enough and homogeneous enough and with sufficient resources, the impact of increased energy conversion was destined to set up oscillations that would wreck any system of social control based upon human toil, scarcity and the exchange of goods and services at a price.

Such an area existed on the Continent of North America. By happenstance of nature, this continental area had been endowed with all the requirements for the development of a high energy, technological civilization which could produce an abundance.

No longer was the destiny of the people of North America linked to a 35 watt capacity. From that time on, things happened fast and furiously.

On August 30, 1831, Michael Faraday discovered electromagnetism and in no more than ten full days of application this master of method and research had produced the world's first electric generator. On September 4, 1882, with the opening of Edison's Pearl Street Station in New York City, the march of kilowatt-hours was on its way.

By 1920, the annual electric energy produced in the U. S. had reached the sum of 43,334,282,000 kilowatt-hours. By 1940, it had advanced to 144,984,565,000 and the end was not in sight. The year 1943 saw 220,969,521,000 kw. hrs. produced. This was an energy conversion rate of 4.48 kilowatt-hours per capita per day, or an increase of 1,600 fold in

169 years from electric energy alone. Vast amounts of energy not converted to electric power were also produced, such as that from steam, oil, gas, etc.

Guy With The Missing Brain

Upon examination, we find ourselves engaged in the absurd attempt to make 280 watt-hours per capita (generating capacity of the human body in an 8 hour work-day) equal more than 4.48 kilowatt-hours per capita (actual amount used). Our Price System economists are still juggling the figures in a vain effort to make them come out even. Our concepts of toil, etc., do not jibe with the physical facts.

The old-rabbit-in-the-hat trick of government deficit spending has so far been the only way of balancing the equation. Economists borrowed it from the magician and it is phony. Besides, every time the economist pulls a rabbit out of the hat and puts it on the low side of the equation, the engineers build a new power house and put it on the other side.

Those at the controls of our social system have no more understanding of the physical phenomena involved than the saloon keeper who called the Electric Company to thaw out his frozen water pipe. The company sent the truck with the low voltage transformer used for this purpose. On arrival the men connected the transformer to the power supply and the water pipe, and in five minutes the water came gushing through, whereupon the man in charge asked the saloon keeper for \$10, the standard charge for this service. The saloon keeper protested that \$10 was too much for five minutes' work and refused to pay. The serviceman was resourceful. He stepped to the door and called out in a loud voice to his assistant, 'Reverse the connections, Bill, we will have to freeze him up again,

he won't pay!' At that, the saloon keeper rushed over and paid the \$10.

There Is No Balm In Gilead

As we look back from our vantage point of 1945, we find that our social mechanism has been developing the dread phenomena of oscillations, which increase in both frequency and amplitude with time. We do not see the rhythmic rise and fall of good times and bad, which economists claim to see. We see a condition similar to an ever-accelerating flywheel, with a weight of 35 watts on one side and 4.48 kw. on the other, while some one stands by and continually adds weight to the heavy side.

Every engineer will recognize the oscillations set up as the type which become progressively more violent, until certain physical limits are reached, at which point sudden disintegration of the system takes place. (Ed. Note: See Chart in middle of book.)

There is no such thing as reaching a maximum and leveling off or a gradual diminishing of these oscillations, without altering the physical factors.

We have tried to give you a picture of the revolutionary change which has resulted from the displacement of man-hours of labor by kilowatt-hours. These changes have produced three well-defined, long term trends:

1. Increasing production of goods and services.
2. Decline of man-hours per unit of production.
3. Decline of total man-hours.

The social implications of these trends are:

- a. Actual production of abundance of farm products and the materials for war.
- b. An enormous potential abundance of consumers' goods

and services, if and when war-born technology is converted to peace-time consumers' goods production.

- c. Diminishing total of man-hours of labor to be exchanged for goods and services. Less purchasing power. Less consuming privileges for a greater number of American people.
- d. Abundance destroys value; therefore, abundance cannot be exchanged for a price.
- e. There is a conflict between the physical realities of modern power-driven technology and the antiquated social-controls of Business and Politics. The casualties of this conflict result from malnutrition, slum housing, inferior clothing and other products, low standards of health, etc. It all sums up to insecurity and scarcity in the midst of potential security and abundance.
- f. This conflict is fast approaching a crisis. If not resolved, the inevitable result will be chaos.

The Evidence Speaks To All

The march of kilowatt-hours is threatening the existence of antiquated laws, customs, habits, values, political and economic concepts born of hand-tool, human toil conditions existing in the dead past.

Social change is imminent. The question is, will social change take place in a smooth, orderly manner, under scientific direction, or will we enter a chaotic period in which all that we consider useful in modern American civilization will be destroyed, along with a large fraction of our population?

This picture of changing states of energy-conversion and its social implications is indeed frightening. We didn't paint it. Facts painted it. Technical men engaged in the design, installation, maintenance and operation of electrical equipment will understand this picture, and they will realize the futility of expecting the gentlemen of politics and business to understand much, if any, of these phenomena and social consequences of power production. Not understanding these problems, it is futile for them to attempt a solution.

The responsibility of solution rests with the technically trained men. They alone are equipped to read the warning signals and facilitate social change.

We urge you to get acquainted with your Technocrat friends, study their data and blueprints, and act before it is too late.

Author's Note

In preparing this material for publication, it was decided to include two charts which are important. One is a graph of the pig iron production in the U. S. (*Ed. Note: See graph on*

page 20), and the other shows the growth curve of electric power production in the U.S. from its beginning through 1944. (*Ed. Note: See curve on page 20*)

Pig iron was chosen because of its basic nature in the technological civilization of America. It is probably one of the best, if not the best, indicators of physical production of any single commodity on the North American Continent, and displays the characteristic increase in both amplitude and frequency in its oscillations as shown in the theoretical curve chart of Fig. 1. (*Ed. Note: See chart in middle of book*). Thus, we have an actual concrete example of the phenomenon under consideration. The electric power production growth curve was included to show the nature of the increase in energy conversion on the North American Continent.

For a combined curve of a large number of commodities and services which gives a highly accurate picture of overall physical production on the North American Continent, see Technocracy's Basic chart, Physical Trends Shape Americas Destiny (*Ed. Note See Technocracy's Basic chart on page 19*).

Now I'll Tell One

'I believe automobile manufacture will start right where it left off for war work four years ago. Then the changes, if any, will be dictated by the public—whether it be faster cars, lighter cars or cars with larger luggage compartments. We'll try to give the public what it wants.'—Charles F. Kettering, vice-president of General Motors, in an address before the American Automobile Association in Chicago, Nov. 11, 1944 (As reported in the *Chicago Daily News* of the same date).

'Doubtless the results of these public opinion samplings will be digested with

interest by those responsible for the design of motor car bodies, but it is not likely they will be taken too seriously for the industry is well aware that cars are designed primarily to sell, and thus the appearance of the product on the sales floor may be of more importance than the minor annoyance of some owner over the shape of a window lift handle. There is a certain amount of aloofness between designers and the public, the former often feeling that buyers will take whatever they, the creators, decide is good for them.'—A. H. Allen, Detroit Editor of *Steel* in the Jan. 15, 1945, issue.

The Engineer's Worth to Society

By Albert G. Conrad, Chairman, Department of Electrical Engineering, Yale University

Reprinted by Permission of *The Yale Scientific Magazine*
Winter 1942

AT no time in the history of our country has our social order been so totally dependent upon science and engineering for its own preservation than in the present crisis.

It is not my intention to emphasize the importance of electrical engineering in this presentation. The aims of all branches of engineering education are the same. Any reference that I use in the electrical field is used only as an example. My interests are not limited to electrical engineering only. After teaching electricity for 15 years I have come to the conclusion that electricity as electricity is a most worthless form of energy. It is not found in nature in quantities that can be utilized industrially. The most powerful lightning strokes that split trees, shatter buildings and create terrific noises, if converted to electrical energy and sold at the rate that is charged by our local power company, would be worth approximately 40c per dozen. It is possible to obtain a small amount of electrical energy from the junction of two dissimilar metals at certain temperatures, but the amount obtainable is too small to consider such an arrangement a source of industrial power. Electricity is generated in the cells of living tissue. The presence of a cancer is apt to cause this voltage to be higher than the voltage of normal tissue. However, this higher voltage cannot be used as an indication of cancer. Poison ivy, mosquito bites, can produce similar changes. All of these voltages are small and usually amount to a few millionths of a volt.

Human Output

The mechanical output of a man is many times larger than his electrical output. A brawny athlete, when working at full capacity can do approximately the same amount of work in a day as 1/10 h.p. motor working during an equal interval. This energy evaluated on the basis of the energy rate of one of our local public utilities would be worth approximately 4c per day. Of course this is not all of the mechanical output of a human being. At rest the average person radiates heat at about the same rate as a 70 watt lamp. This radiated energy is worth about 7c per day. The total energy output of the average individual is therefore worth approximately 11c per day. The average person eats approximately \$1.00 worth of food per day. In return the best that can be expected is 11c worth of energy. The efficiency is nothing for the human race to brag about.

How then can a civilization exist when our consumption is so much greater than what we ourselves are able to produce? The answer is simple. We are a bunch of parasites. We are living on what we can get out of the storehouse of civilization and our most generous benefactor is mother nature. She has placed coal in our hills, oil in our sands, and water in our streams. These, our natural resources, are the things that permit us to enjoy a standard of living that our ancestors never dreamed of. The importance of these

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Electricity Knows No Bounds

Reprinted by Permission from Power Plant Engineering,

January 1945 (*Italics ours*).

ELECTRICAL ENGINEERS have no misgivings about the future as far as their own work is concerned. They feel confident that the future is going to flow from the past without interruption and with increasing acceleration. *Electricity is the common denominator of everything in the Universe* and they know that they can make it do anything they want it to do.

Electrical engineers work through the natural laws which govern the workings of the Universe. While these laws are inviolable they are not necessarily limiting. Only man made laws are limiting. As aptly expressed by David Prince of the General Electric Co., nature's laws are partly for the purpose of directing us to the things we can do instead of limiting us to the things that we cannot do.

Some of the things with which electrical engineers and electrical scientists are working with are truly appalling in their ultimate effect on the human race. We know what such things as radar are capable of, we know something of what it means to be able to drop from two to four thousand tons of bombs on the enemy in a single day, and we also know the devastating effect of a pilotless robot plane carrying a ton of explosive when it hits a densely populated center. But we do not know exactly what it would mean if we should find out how to isolate, say 5 pounds of uranium 235. There have been vague reports that the Germans have been working on an atomic energy bomb. No doubt this is true but it does not mean that they have succeeded in producing such a bomb. We, also, have

been working on developments of this kind and while it is unlikely that such weapons can be perfected for use in this war, it is not for us to say that they will not be available for a third World War if we are foolish enough to let the politicians lead us into a third war. Such a development would all but finish us. A medium size atomic bomb would wipe out London or New York and in the language of Shakespeare, "leave not a wrack behind." Irving Langmuir, Nobel Prize winner in physics pointed out not very long ago that a quart of electrons separated from associated protons and neutrons would expand with an energy equal to the explosion of a cube of TNT 500 miles on a side, reaching from London to Berlin! National sovereignties become meaningless in the face of such prospects.

They are not pleasant prospects but they are unpleasant only because man can make them so. There is also a pleasant side. Many people throughout the world, now, are worrying about the eventual exhaustion of our oil resources, and this goes for coal also, although coal will last much longer than oil. But if we can learn how to separate electrons from protons there will be no reason for us to be concerned for then we will have a potential supply of energy where one pound of material will give us two billion times as much heat as there is in the best high octane gasoline.

A few years ago, there was considerable discussion in engineering circles about the possibility of direct-current transmission of power. At that time, the problem of overcoming instability on long a-c lines had not

been solved to the extent that it is today and direct current at high voltage offered definite advantages. This is still true today and today we are much further along toward the ultimate carrying out of the d-c transmission idea. *With our high power electron tubes of the present day it would be quite within the range of possibility to build a high voltage d-c transmission line if we wanted to do so.* It is not certain that we want to do so but it could be done. As a matter of fact a short high-voltage d-c transmission line has been in commercial service for a number of years with excellent results.

Today, however, a new possibility exists. We have learned how to transmit power at high frequencies for considerable distances without wires by the use of wave guides. Microwave "plumbing" it is called. So far, this method of transmission has been used only in the communication field but who is to say that the principles involved in this method of transmission will not, some day, be used for heavy power purposes? By this method it is possible to transmit electric power through a rubber hose.

Modern electron tubes have a much more immediate application in the power field than that involved in d-c transmission, i.e. in the conversion of a-c into d-c for control purposes. One of the things electrical engineers have been working on ever since a-c transmission came into general use was an a-c motor that had speed characteristics equivalent to those of the d-c motor. All sorts of ideas were tried, all sorts of makeshifts improvised but no a-c motor, however good, ever was quite as good as the d-c motor in respect to its speed characteristics. Today, however, we can take alternating current of any frequency, convert it to variable frequency for use in a synchronous motor or to direct current for use in an

ordinary d-c motor. In other words, today, because of the electron tube, we can operate d-c motors from the a-c lines. As yet, equipment for controlling motors in this fashion is available only in comparatively small sizes but there is nothing in the idea to prevent its use with the largest motors in use—all that is needed are larger tubes.

During the past year there was installed in one of the large steel mills an electron tube frequency changer with a capacity of 20,000 kw. As described in the December 1944 issue of *Power Plant Engineering*, this unit is designed to exchange power, reversibly, between 25-cycle, 44 kv and 60 cycle, 69 kv systems. Now, 20,000 kw is still comparatively small compared with the power of a 160,000 kw generating unit but it is anything but chicken feed. If we can make a 20,000 kw electron-tube converter, we can make a 100,000 kw unit—it is merely a question of whether we want to do so or not. The day of the rotary converter is about over and nobody will be sorry because they have been sources of plenty of trouble. This does not mean that no more rotary converters will be built; it does mean, however, that increasing attention will be given to electronic conversion.

As has been pointed out in these pages frequently in the past few years there is nothing particularly new about electronics except that, at long last, we are beginning to apply it. Take the case of high frequency heating; this was developed in the laboratory over 20 years ago. In the early twenties if was possible to surface harden small steel parts by means of high frequency currents generated by electron tube oscillators. Only during the last four or five years has this method come into active commercial use. With it, we can take the outside of a metal part, heat

it to red heat and chill it again in so short a time that only the surface is hardened. Or, if we want to heat the interior of a body we can do it easily and quickly by similar methods without disturbing the outside of the body. In all these things we have made only beginnings. They will be developed and extended in countless ways.

In the field of measurement and instrumentation, electricity can do anything we require. We can measure distances of a billionth of an inch or speeds within a fraction of a per cent of the speed of light. We can measure electric currents of six electrons per second. By means of the photoelectric recorder, we can record variation in currents measured in microamperes as easily as, a few years ago, we could record currents measured in amperes.

Electricity is also doing things which formerly were done largely by the human brain. In the oil refinery processes, for example, there are processes where hundreds of valves have to be opened and closed in proper sequence. The intervals involved are so short and the multiplicity of the operations so great that it is no longer possible to do them manually, so electric brains have been developed which do all these things in perfect sequence and with absolute accuracy.

In some fields, electricity has all but replaced our very thinking processes. Consider a machine developed jointly by Harvard University, the International Business Machine Co. and the Navy during the past few years and now in operation in the solution of complex mathematical problems. This 5-ton mathematical robot can solve any problem in applied mathematics put to it with results reading to 23 decimal places. It actually consults logarithmic and other functional tables. It is powered by a 2-hp motor, works 24 hr a day, 7 days a week and never asks for time-and-a-half. Addi-

tion and subtraction takes the machine 0.3 second; multiplication, 5.8 seconds; division, 14.7 seconds. In a period of 19 hr. it solved a problem which had required 3 weeks work by 4 experts using ordinary office calculating machines. In some ways, this algebraic superbrain is one of the most remarkable inventions to come out of the war. (Ed Note: See *Great Lakes Technocrat* May-June 1945 issue, page 34)

In some fields of electrical engineering it might seem that we have gone about as far as we can go. We have generators and transformers so high in efficiency that unless we do away with the law of conservation of energy we cannot expect to have much further development. Transformers have been built with efficiencies better than 99.5 per cent. What more can we ask for in this direction? Not much, true, but as David Prince has pointed out, we can still make transformers and generators smaller and we can develop new materials to make them better in other ways than merely increase their efficiencies. We are learning how to make them faster and cheaper and so, more available to mankind. For the first time in history we have 30,000 hp steam turbines in quantity production; at the same time we have *reduced the number of man-hours to make one of these units to 71 percent of what it used to take before the machines were standardized.*

As far as future progress is concerned, from a technical standpoint there is practically no limit to what we will be able to do if we want to do it. The war has brought this home to us as never before. *Many technical developments are held back merely by the fact that a small group of people cannot make any money out of them.* That happens to be the case with television. We could have excellent television today, indeed we have it, but its commercial development is held

back by a sort of vicious circle involving on the one hand, the buyer of television receivers and on the other hand, the buyer of television service. Unless there are enough television receivers installed in the homes throughout a certain area, the television broadcast stations cannot get sponsors to pay for television programs. Conversely, unless the public is assured of satisfactory television programs, people are

not inclined to purchase television receivers at a price of from \$200 upwards.

What is true of television in this respect is even more true in many other branches of the electrical art. *So far we have barely scratched the surface in the use of electricity but we need something in peacetime, comparable to what we have in war to make us develop these uses.*

ENGINEER'S WORTH TO SOCIETY

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resources is not limited to their effects on our standards of living. National resources are a far greater factor in deciding the supremacy of nations than dynasties or conquests. It is the lack of these resources that has made some dictators aggressive for additional territories and at the same time in other parts of the world the scarcity of these resources has limited aggression more than peace treaties. The date at which these resources are being used is appalling. In some parts of the world they are practically exhausted. We in later life will probably regret having used them so lavishly at this time. And in spite of the fact we are doing nothing to conserve them. Thrift is inconvenient.

Potential Power in the U. S.

We, in the United States, are particularly fortunate in having $\frac{1}{2}$ of the world's coal supply, or approximately 3,830,000,000 tons. This is no small pile of coal. What is it worth to us? If this coal is converted to electrical energy and sold for 4c per kw. hr. it would bring a return of approximately \$300,000,000,000. This is about 30 times the gold supply of the entire world. The United States has 26,700,000 h.p. of water power avail-

able. This is $\frac{1}{6}$ of the world's supply. What is it worth to us? Converting it to electric energy and selling it at 4c per kw. hr. would bring an annual return of \$5,000,000,000.

The value of anything depends on the use to which it can be put in supplying man's needs. Our coal had little value 70 years ago. People did not realize its value as a fuel. But through science and engineering this worthless black deposit has been made to have a value of \$300,000,000,000. This represents the creation of wealth. This is engineering. The engineer creates wealth. The economist attempts to control its distribution. He does not create it. These natural resources have provided wealth. The standard of living in the United States today is directly dependent upon the intelligent and continued use of these resources. It has been said that electricity in modern life is second in importance only to food and shelter. If we were to open the switches in our power plants, our modern machines would be worthless. Our refrigerators and heating systems would cease to function and elevators would stop between floors in darkened shafts. Fire and police systems would be inoperative and crime would be rampant

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When the Lights Went Out

Truth Is Stranger Than Fiction

By J. Cozzy Graham

Within the very near future, North America will be faced with the most serious crisis in her entire history. Technocracy seeks to avert this crisis. For the last twelve years Technocracy has correctly analyzed America's problems and indicated that this condition would arise. This is not mentioned in the spirit of 'We Told You So,' for 'Technocrats are no smarter, neither are they any dumber, than other Americans. They differ mainly in that they approach America's major problem along a new pathway, the pathway of Science. Technocracy IS Science applied to the social mechanism. In that sense we are Pioneers. We have no antecedents to show us the way, nor any precedents to guide us. No one has ever been over this path before.

In The Beginning Was Energy

HERE are probably the only technical statements we'll make in this entire article:

Energy is the capacity to do work, whether in the food we eat or in the form of coal, oil, gas or waterpower converted through technological equipment.

It is by the continuous flow of energy that we live. Shut off that flow and we perish.

The greatest cause of confusion amongst the leaders of Party Politics, Corporate Enterprise and the population in general is their complete ignorance of the kind of a physical world in which we live today.

What does this imply? Let's see if we can illustrate with a few notes from the diary of an average man or woman:

Arose this morning, pressed switch button on wall; presto, there was light. Under the shower, manipulated a couple of faucets; presto, hot and cold running water. Flushed toilet; more water. Down to breakfast, hot coffee steaming on electric

percolator, toast browning in electric toaster, fresh cream from electric refrigerator. Turned radio on the newscast. Remembered to call office, dialed phone, instantly in communication with my party. Got into my car, put key in switch, gas tank full, stepped on starter, shifted lever, on my way.

Arrived at plant; brightly illuminated with fluorescent lights; assembly line in operation; conveyors moving overhead; motor carriers scurrying all around the place; bustle of activity.

Went into office; boss talking over intercommunication system, girls operating comptometers, teletypes and other devices.

But why go on; it's all in the day's work. Correct! And so easily taken for granted. Do we know what makes this type of civilization possible? It is the continuous flow of energy transformed through technological equipment. Nevertheless, we remain blissfully ignorant of the character of this complex mechanism.

We concern ourselves only with its control and operation as an academic

subject, or else as it concerns a monetary or political struggle for advantage. Who operates it, where and what is its motivating power, when is it oscillating? These things never concern us. Only when the lights go out are we momentarily aware of how utterly helpless we are without it.

Energy Is Still The Beginning

The people of Kansas City experienced a few hours of chaos on September 17, 1941, when their city was paralyzed by a power strike. The editorial writers could find nothing more significant to write about than the reprehensible behavior of the power plant operators. They missed the bus completely on the social meaning of the important of power.

On December 12, 1939, 12,000 families in Regina, Saskatchewan, found themselves seriously inconvenienced for several hours by a shutdown of their power plant. Darkness blanketed the interiors of buildings, water taps produced just a 'gurgle' as lack of power reduced pressure in water pipes. Hygienic facilities were seriously handicapped. With no other facilities available, toilet bowls filled. The only outdoor privies were well on the outskirts of the city beyond the water mains.

These two examples are picked from amongst many such incidents. To the uninformed these events are nothing more than conversation pieces. To the informed they are indicators of the radical change in the structure of our Social Mechanism. They are advance notices that a new type of control, conforming more nearly to these physical factors, is imperative if we are to survive a period of crisis.

How real the danger is can readily be understood by reconstructing the authoritative reports of the following incident.

Technology Is Tenuous

On January 15, 1936, the Consolidated Edison Company of New York City ran this advertisement in the *New York Herald Tribune*:

"NEW YORK CAN'T STOP"

Imagine what would happen if some disaster destroyed one of our generating plants and we had no other? Imagine being marooned on the 50th floor of one of New York's skyscrapers if there were no reserve electricity for emergency!

New York must always have ample reserves. That is why we have 7 great generating plants, strategically placed about the city and all interconnected so if any should fail, the others may be called upon. Thus, the essential character of utility service is preserved. . . . That is **DEPENDABILITY**.

The Edison Company meant well but before that day was ended, New York was to experience an event which made a dramatic mockery of that ad.

The Hell Gate Power Plant, second largest in the world, supplies power for all of Manhattan north of 59th Street the entire Bronx, and part of wealthy Westchester County. In this area are located approximately 500,000 of fices, apartments and homes.

The Central Control Room of this station is at 40th Street and Ave. A. The walls of this room are covered with hundreds of dials and lights. Before them sit three shifts of engineers working night and day. This is the Control System which directs the distribution of power (energy). In accordance with the flutter of a dial gauge or the flash of a light, these engineers can tell where power is needed or where too much is being supplied.

By direct wire and phone connections with each generating station, they increase or decrease that plant's output as required. The heart of the Hell Gate plant is the Buss Bar, 400 feet of pure leaf copper, 6x8 inches thick. It is divided into six sections, each separated from the other by concrete walls and double steel doors. Forty feeder cables feed up to this Buss from the eight turbines in the basement. The power is then distributed to the City of New York from the Buss, like a great heart pumping out life blood through the arteries of a Giant.

At 4:00 p.m. of that day, everything in the plant was running beautifully. The giant turbines in the basement howled louder and louder, as each minute the control called for more and more power, and the power was being supplied. At 4:16 p.m., the fireworks literally started without warning. Sitting before the central control panel down at 40th Street, the engineers were startled by the flash of green light. Green meant open switches.

The Veneer Is Very Thin

The 6-6-3 signal, the worst signal in the code system, flashed on. This was the SOS. It meant that every switch in the giant plant had been blasted open. What had happened? It was reported that a short circuit occurred in one of the feeder cables leading to the Buss Bar. Power flowing through the 'fault' created intense heat which burned off the insulation covering the cable. The oily substances in the cable were volatilized, creating a powerful gas, which so reduced the insulation effectiveness of the other cables that short circuits occurred in five of the six sections. The gas was exploded by the crackling arcs of electricity.

Concrete walls blew out like paper, copper bars were burned off and

twisted, steel rods burned like candle wicks. As one writer put it, 'Hell Had Broken Loose At Hell Gate!' With power and light gone, an emergency conference was held at the city hall. All available police and radio cars were dispatched to the northern part of the city to prevent looting, riots and traffic snarls in the darkened areas. Twenty police stations were without lights or power, their teletype systems and radio cars helpless. Traffic lights were dead. Two hundred and fifty Department of Park trucks were rushed to important intersections to train their headlights wherever they could be of use.

Thousands of flares were placed along park driveways to guide cars and protect citizens from thugs and attackers. On Broadway the streets were jammed solidly with a tangled mass of honking cars, unable to make headway. The cold January rain fell in a drizzle, turning the streets to sheets of glare ice. Pedestrians could not cross the streets without the aid of police flashlights.

At the Parkway Hospital, an emergency administration of oxygen was given to a six-year old boy critically ill with bronchial pneumonia, two doctors working by the light of *matches* for nearly one hour. An emergency gall bladder operation was performed by the light of candles and a plumber's flashlight. Up to midnight, the nurses made their necessary rounds by the light of candles and matches. It required no great imagination to picture the danger of fire and panic.

At St. Elizabeth Hospital a delicate eye operation for glaucoma was completed entirely by flashlight. While at Columbia Presbyterian Medical Center a newly born babe first saw the light of day in total darkness.

The New York Foundling Hospital was having its moments. It was bathing time for many of the babies and

scores of them started howling simultaneously. Nurses groped and collided with each other in their desperate search for matches and flashlights. Elevators were stalled and could not be used to carry food, patients or doctors.

Refrigerators, which kept the bacteriological test tubes at constant temperatures and the food and milk from spoiling, stopped operating. Radios, which might have kept the patients calmed, went dead. Fear of fire kept every one in a cold sweat.

'—But Three Short Days Apart'

Gas had accumulated under the streets as the overloaded cables burned out and manholes blew sheets of flame skyward with a roar that could be heard for miles. Bakers, commencing their night baking for the next day's goods, found themselves helpless as the electric blowers to the ovens could not be operated. The telephone company experienced its share of the chaotic scene, as seven of its exchanges were disrupted. The rest were swamped by more than 500,000 extra calls from those trying to find out what had put New York in darkness and by the frantic efforts of families trying to contact their members.

Hotels and apartments, ranging from 25 to 50 stories, were crippled. They found themselves without water, refrigerator or elevator service. There was no electricity to keep their oil burners going. More than 80,000 movie patrons sat in the darkened theatres, expecting the show to go on. They were finally given refunds. Amateur and professional pickpockets were having a Roman Holiday in the department stores. The managements finally dismissed the clerks and closed up shop. There weren't enough candles to supply one-tenth of the demands, and the price of candles rose to as much as fifty cents each.

Thugs were having an easy time of it as their victims could not identify them. Below ground in the subways, tens of thousands were trapped in the stalled trains; the ventilation system stopped functioning and the air became stifling. Yet the trainmen dared not permit the passengers to walk to the nearest station. It would mean death to any who stumbled against the third rail if the power were to come on suddenly. Later, as power was partially restored, the trains slowly proceeded to the stations. The passengers swarmed out into the still darkened platforms which were jammed with those who sought safety from the darkened streets above.

Police tried to keep people from entering the blackened subway stations. Entrances were roped off. Men and women fought back. They insisted on trying to slip by and enter the already jammed subways. They were told there had been a power break and the subways were not running. One persistent dumbhead said:

The subway not running? Nonsense! It's never happened before, has it? Well let me by or I'll report you.

Engineers To The Rescue

Back at the Hell Gate Station, the technicians worked feverishly. The right men were in the right places, and by 5:15 p.m. had most of the disabled Buss Bar working so it could distribute power again. The biggest problem was *still* to be solved. How to get that power back gradually to the northern half of Manhattan. An electrical system is stopped easily enough but not so easily started up again. Like a stalled car, it must be started up gradually. You can't put a stalled car in high and give it the gas. She'll just stall again. Similarly with an electrical system. When the lights or

radio go off, it is not customary for people to turn off their switches. When the power went off at Hell Gate, hundreds of thousands of light, radio, refrigerator and other types of switches were left closed. These acted in similar capacity to full throttle of the stalled car. When the power was put back on with all these closed switches, the system stalled.

Fuses blew out, transformers burned out, cables melted and manhole covers exploded to the sky. At the sub-stations, the switches tripped out automatically. Three thousand additional Edison men were hastily called to go into the darkened basements of buildings and unscrew fuses and pull switches wherever they could find them, so as to pull down the load.

In an attempt to get the power back on, so many fuses were blown that the total available supply of the company was used up and emergency calls were sent to unaffected counties, and even these were insufficient. Telegrams went out to fuse equipment manufacturers to put on a night shift and rush delivery. By dawn, power services were restored to normal. Electrical energy was again flowing over the lines of New York City.

The Storm Signals Are Up

New Yorkers had temporarily experienced chaos. One writer reported that New York had found out that it was the most vulnerable island on the Continent. He missed the obvious fact that *ALL NORTH AMERICA IS PUT TOGETHER THAT WAY!* This Continent is a high energy converting mechanism. Our present American civilization and the existence of 150 million Americans is made possible *only* by the rate at which we in America convert energy. Without this and the necessary industrial metals and other natural resources, our American

Way of Life could not survive *regardless* of whether the form of government were republic, communist or corporate state fascism.

A major disruption of the flow of energy would, within a period of thirty days, place the lives of 90 percent of the population in jeopardy.

For eight years prior to our entry into the present war, Technocracy warned the people of America that the indicators which it studied were flashing 'Danger' and warning that our entire social mechanism was in oscillation. A reading from one of these basic industrial indicators. 'Pig Iron Production' may be enlightening. (Ed. Note: See chart on page 20). The first major oscillation occurred in 1893. From peak to trough, the drop in production was 27 percent.

The second occurred in 1908. That drop was 38 percent. The next oscillation in 1921 dropped 57 percent. From the highest peak in 1929, the drop was 79 percent. As production reached a new high after each depression, the succeeding drop was 30 percent greater than the one preceding it.

In 1929, pig iron production was approximately 46 million tons; last year's production was 90 million tons. In 1929 we could not sustain our much smaller rate of production and the resulting down sweep took us to within 21 percent of complete shutdown. There is no known method within the framework of a Price System that can sustain the present high level of production. It is not possible in a Price System to stabilize a 'Boom.' All 'Booms' have ended in depressions.

The deficit spending of the U. S. Government has kept us from hitting bottom since 1929. We are living on borrowed time. The combined efforts of party politics and corporate enterprise proved incapable of raising the level of employment to that of 1929.

New Tools For A New Job

Only the pressure of a total war was able to accomplish what the dominant controlling interests of America could not do. Total War provided a high level of production *and* full employment. Clearly then the close of the war will most probably bring shutdown and widespread unemployment. Consequently, the Peace is feared more than the war. We were totally unprepared for the war. Today, we are equally unprepared for the peace.

Will the downward oscillation at the close of war be 30 percent greater than 1929? On the basis of past experience and observation of the trends, this is the most probable. Our present controlling devices were incapable of stabilizing our social mechanism when the problems involved were only half the magnitude. How can they cope with this larger problem? This is the crisis with which America may be faced! It must be averted. Yes, the danger is real. The lights could go out!

It was the knowledge of these factors and trends that prompted Technocracy Inc. to design a new set of controls that were in accord with these physical realities. It is presented to the American people as Technocracy's Total Conscription Mobilization for Peace. The stability of our internal operations must be maintained. The unity of the population must be achieved, in order that the transition from war to peace be accomplished in a smooth and orderly manner.

The specifications of Technocracy's Mobilization for Peace are not the desires nor wishes of the Technocrats. The specifications are the result of the requirements arising out of the problem. The program proposes equality of sacrifice for *all*, based on the same standards of food, clothing, medical

attention, dependency allowances, etc., granted those serving in the armed forces. Total Mobilization of Men, Machines, Materiel and Money, with National Service for All and Profits to None is a part of the specifications dictated by the march of events.

Do you wish to keep the lights of America glowing? Then you must realize that this is not the responsibility of the Technocrats alone; it is the responsibility of every truly patriotic American.

His Master's Voice

The alternative is implied in this editorial report of the 'Hell Gate' incident (*New York Times*, week of the Hell Gate failure):

The incident carries with it a striking social lesson particularly in a week when technical societies are celebrating the 200th anniversary of J. Watt's birth. During most of the 19th Century energy was generated individually by thousands of engines that were the lineal descendants of the first mine pump that Watt designed with a separate condenser. Now energy is produced in central stations and shot hither and thither over vast regions. Moreover, energy can be pooled. The New York Edison draws upon the electrical resources of its own stations and those of the Niagara Hudson Company. It is the modern mass character of energy that is driven home by New York's mishap. A short circuit and the organic life of a great city is slackened for a few hours. Back we drift to the 18th Century, to burn candles and to realize what we owe to the physicist and the engineer who have made energy collective and who transform the city into a

blaze of light when the sun goes down.

How utterly dependent we are on the engineers! They and the scientists hold us in the hollow of their hand. How many of them are there? 100,000 . . . a million . . . who knows? They constitute a new ruling class. Destroy them and the country would be laid low. Disease would decimate us . . . transportation would be impossible . . . telephone and telegraph would be silent . . . starvation would stalk in the cities . . . factories would stand idle. **TECHNOCRACY?** The term is in bad odor. **BUT** there are technocrats for all that . . . **KNIGHTS NOT OF THE SWORD BUT OF ENERGY.** When the lights go out, we become aware of our leaders.

All In The Same Boat

Those who have analyzed the facts and physical trends indicating America's destiny naturally are concerned with the apathy manifested by the vast body of Americans. There are those who are convinced that due to their

strong financial condition, they can ride out the coming storm. There are those who even in periods of depression have been able to rise on the economic scale and who feel that they are clever enough to come out on top in any situation. There are those physically tough Americans who are certain that come what may they will survive and come up 'top dog.' Lastly, there are those too timid to take any stand on anything at any time.

Whichever group you may be part of, whether wealthy or poor, clever or dumb, timid or tough, you will have no edge. We'll all sink or swim together. It will require all the collective intelligence we can muster to prevent America from committing mass suicide. Only one organization on this Continent is designed to spread that intelligence, *Technocracy Inc.*

Not only would the adoption of its design of Total Conscription and Mobilization for Peace avert chaos but it would enable us to swing into that great one lane highway to the New America of Abundance, with security for all from birth to death and a Freedom of reality, never previously experienced by any peoples in any age.

Is There a Doctor in the House?

'The national physician-to-population ratio which is considered the minimum necessary to protect civilian health is probably about 1 to 1000,' says a fact sheet on rural health and sanitation, issued by the U. S. Department of Agriculture. 'Individual areas are considered critical if they have a ratio of one physician to 1,500. In April, 1942, there were 16 rural States that had less than one active private practitioner for 1,500 people in 1,005 rural counties which neither included a metropolitan center nor were adjacent to counties which had metropolitan centers.

The total population of these counties exceeded 22,000,000. The average number of persons per active practitioner in these 1,005 counties was 2,015. In the same month, an equitable distribution of the Nation's available physicians could have provided one for every 937 persons.' (U.S.D.A. Clip Sheet, June 24, 1945).

New definition: 'HEALTH—a condition which, if it becomes epidemic, would be fatal to doctors.'—From *Everybody's Digest*, Aug. 1945.

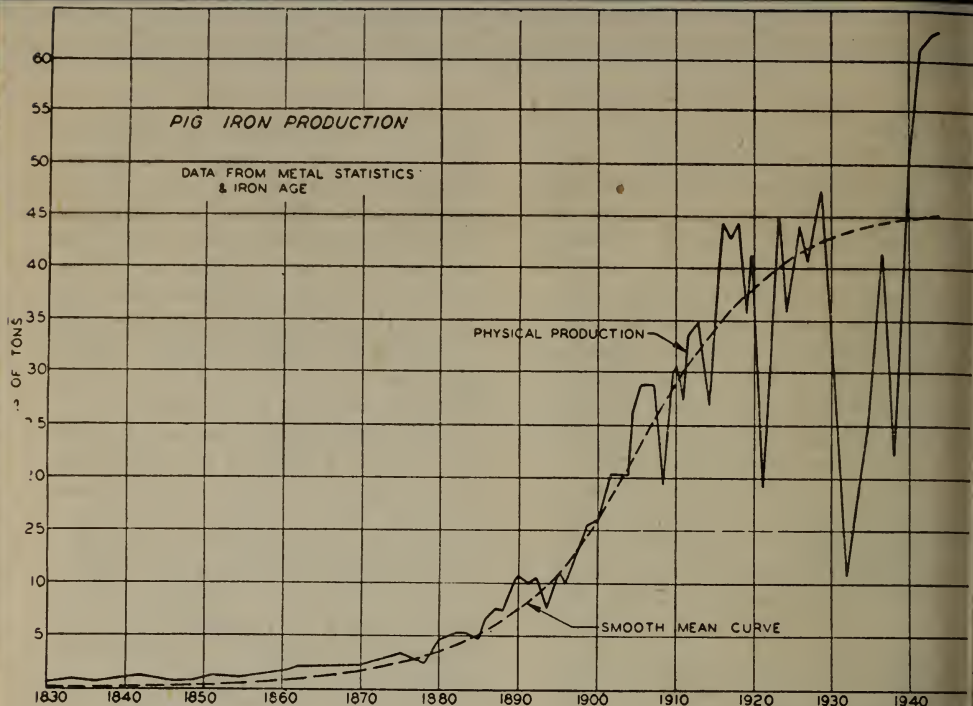


Figure 2: From Technocracy Study Course Book

The jagged curve of pig iron production. Observe oscillations. From peak to trough in 1893-1894 was a 27 percent shutdown, in 1908 it hit 38 percent, in 1921 it was 57 percent and in 1933 about 79 percent. Each oscillation was 30 percent greater than the preceding one. Note the break in 1933 which was halted by a resumption of government spending. This phenomenon shows up also in ton-miles revenue freight hauled, in automobile and coal production, in other fields and in total use of energy.

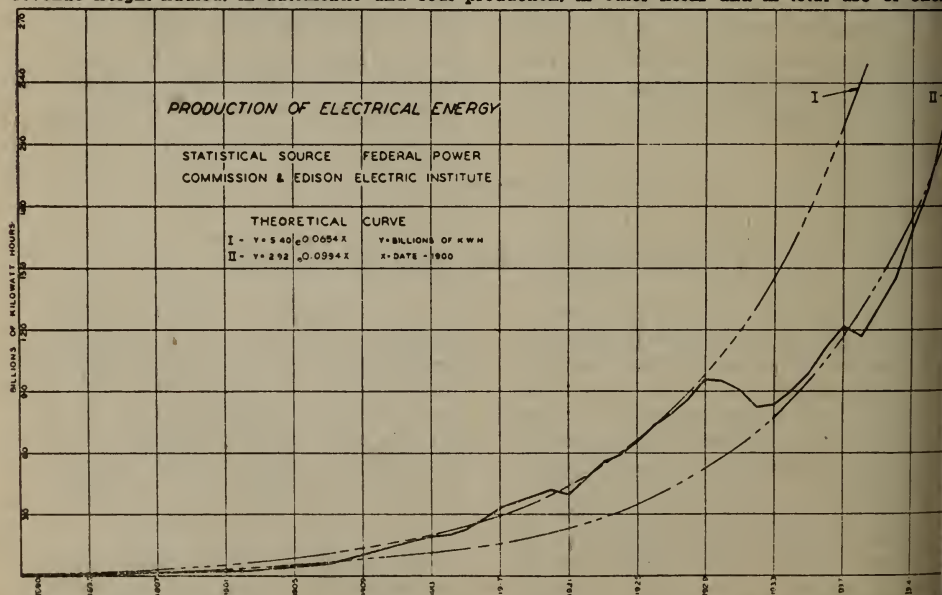
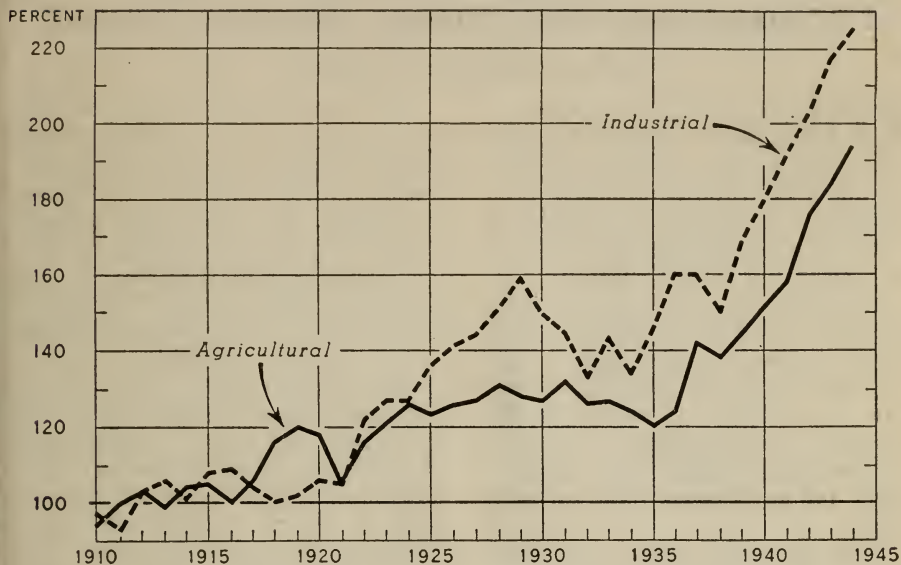


Figure 3: By Research Com. 83

Here is the same oscillatory characteristic of unbalance again. Note the dates in the downward drop in power production. Notice especially the break in 1937-1938. Volumes have been written to explain it away, but there it is. As shown, since 1890 there has been a tremendous increase of energy in into social mechanism. Just a few kilogram-calories more per capita and the ancient Price System

PRODUCTION PER EMPLOYEE: AGRICULTURAL AND INDUSTRIAL, UNITED STATES, 1910-44

INDEX NUMBERS (1910-14=100)

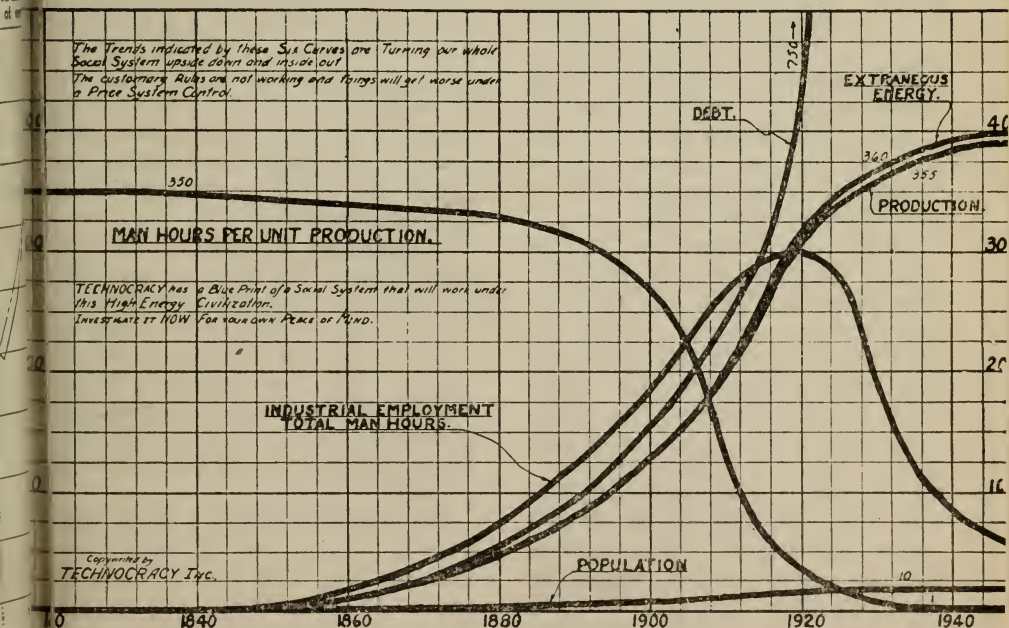


U. S. DEPARTMENT OF AGRICULTURE

NEG. 45217

BUREAU OF AGRICULTURAL ECONOMICS

There is the primary effect of energy and technology. Man-hours per unit are reduced, so production per employee rises. This spells more production with less man-hours and purchasing power. The oscillations of 1921, 1933 and 1938 show up here also. The only way to produce abundance is to employ more technology and energy and less toil. Under Price System controls this leads to catastrophe.



Technocracy's Basic Chart

This is the physical history of North America from 1812 to 1948. It was drawn prior to World War No. 2, which has altered the trends since 1940 to some extent. For a complete explanation of this chart, consult **TECHNOCRACY STUDY COURSE BOOK**. Man-hours per unit of production must decline. This is

Technocracy Welcomes Atomic Power

By The Peripatetic Technocrat

ON July 16, 1945, in the desert of New Mexico the first atomic bomb was exploded. It dropped smack on top of 70 centuries of human social concepts. It blasted the mantle of validity from ideologies reaching back to the dawn of recorded history.

The death warrant of the old order of things was written high in the skies with a brilliance that shamed the light of the Sun itself. Overshadowing even the military importance of this event for an America then at war were its far more pregnant social implications for an America soon to be at peace.

The big thing about the atomic bomb is that a new source of energy has been uncovered. Technocracy welcomes this new addition to America's already abundant supply of extraneous energy. The event only confirms Technocracy's long standing thesis of the law of energy determinants.

Any increase in the application of extraneous energy, whether from fossil fuels, hydro-electric sources, or the fission of the atom becomes more unmanageable in direct proportion to its application under the Price System.

North America does not need an increase in thousands of percent in available power. Under the Price System we cannot manage properly the sources of energy available to us now. The more energy we convert into power the more difficult it is to maintain employment and purchasing power. With an increase of only a few percent in power over what we now have, the ideal of 60,000,000 jobs becomes a farce. Twenty million workers could produce everything everybody needs. The other 40,000,000 jobs become unnecessary to provide, and impossible to maintain.

The North American Price System has become progressively more invalid and unmanageable as technology has become more advanced and more extraneous energy has been applied. Now we face the possibility of new and abundant sources of cheap power in the not distant future. The resulting social effect under the Price System is bound to be catastrophic.

No political party, nor private enterprise, can control this new source of energy. It is not because they do not want to, or will not try. Indeed not! All sorts of hair-brained schemes will be proposed. It is because they do not have the right kind of good will, plus the exact knowledge to go along with it.

The right kind of good will would require that business and politics surrender their preferential advantages and social interference privileges in favor of the General Welfare. This, they are hardly likely to do. The exact knowledge required is in the sole possession of science and technology. It is part of a method of ratiocination, strange and foreign to the fields of business and politics.

Handicapped as they are, by the psychology of the cash register, our social leaders will find it impossible to do anything with this new problem except to muddle around with it. That is what they have been doing with all of our social problems 'since memory runneth not to the contrary.' They just simply do not know how to proceed.

We required but two years and \$2,000,000,000 to develop the atomic bomb. This was for the malignant, but necessary, purpose of destruction. There is a benign possibility to the use of atomic power

also. If we really mean what we say when we speak and write unctuously about peace on earth and good will to all men, we can bring the full social beneficence of atomic power into fruition in another two years. Do we want to?

With or without atomic power, North America can banish scarcity, insecurity, inequality of opportunity and all the other social banes of the Price System, and provide abundance and a real physical democracy for all citizens now. We have the resources, the installed machinery and the know-how. It is only a question of whether as a people we have the right kind of good will to tackle the job. The exact knowledge of how to go about it is here already.

If we do not take on this big job now, voluntarily, the motivation for doing it will soon be supplied by the pressure of physical events which are approaching inexorably closer. The doing of the job may then be accompanied by much suffering and sacrifice.

The dictum of technology is that we must scrap our 70 centuries-old concepts of buy low, sell high, and keep things scarce, of production and exchange for private profit. We must reorganize our entire social structure along engineering lines to produce and distribute for the General Welfare. If we fail to do this now, the ushering in of atomic power will only hasten the inevitable social disaster being brought about by Price System methods of operation.

Today America has the psychology of a defeated nation. We act as if we are afraid of something. There is no physical reason for our fears. We have just finished demonstrating our incalculable might for war. The military victory is ours. Let us now see to it that the peace does not defeat us.

The science and technology that made our war effort successful is still

with us. We have lost much in the lives of many of our best young men. We have also gained greatly in the ability to solve mankind's oldest social problem: 'What shall we do to live?' If we can do it for war, we can do it for peace.

There is nothing to be afraid of. The significance of the atomic bomb is that the great American social problem has been thrown into bold relief against the awful fires and smoke that rose into the stratosphere over Hiroshima and Nagasaki. It is easier today to see that problem in its true perspective.

Now we are face to face with the postwar period, stark naked of any collective social design of operations. We have had over three years to get ready for the time that is now at hand. We have done nothing about it. In addition, we remember the futility of Price System attempts to solve social problems in the past. Here is the true source of our instinctive fear of the future. But while we are jittery with apprehension, we have in our very hands the means to construct a more advanced and higher form of civilization in North America, right now.

In the light of these facts, we witness the sorry spectacle being staged by our leaders in business, politics and education. The only thing they can think of to do with America's new found power, atomic and otherwise, is to turn it over to some international commission or other, or to hope and pray that man will somehow be granted the occult wisdom to use it wisely.

The great American social problem doesn't call for occult wisdom. It is an engineering problem. Technocracy states that the only way to use our scientific knowledge wisely is to apply it socially for the General Welfare. The implications involved can neither be denied nor evaded. In the long run,

science and technology will have their way, willy-nilly; or chaos will ensue.

It is up to us who did not take up arms against the foe, and for those who did and survived the holocaust, to be true to our fellow Americans who fell in the battle. They lie buried today in the well-ordered cemeteries of the old countries of Europe, in the green hell of tropical jungles, on the windswept shores of lonely islands out in the vast Pacific, or deep in the dark depths of the restless sea. Many of them will never come home again, dead or alive. It was not for them to hear the glad ringing of the peace bells, nor to join in the happy celebrations. They died to make it all possible. They died for an America that can be, not for an America that was. To

put it another way, they did not give their young lives for the old America of scarcity, insecurity and depressions. They fought for the land of the pioneers' dreams, the promised land of abundance. It is up to us to create that America, else their great sacrifice will have been in vain.

Technocracy calls upon all North Americans to re-examine the framework of the Price System social structure in the light of the new atomic power. There, plainly written, for all to read, is the handwriting on the wall. The choice is now between science or chaos. There are no other alternatives left. Think well, Mr. and Mrs. American. What are YOU doing about it?

INVESTIGATE TECHNOCRACY!

The Ghost of Juniper Ridge

'There you are. The experts are happy; they have always said "no tin" and regardless of hundreds of tin assays proving them liars; regardless of years of fighting, especially around Juniper Ridge in Oregon, the experts have taken the bit between their teeth and refuse to see any tin ore in these United States.

'They are no doubt very happy to have the backing of the elite "E & M J" to prove that there is no tin ore in the United States.

'I hereby contend that the editor is either an old fossil, or in the pay of a vicious "good neighbor" tin cartelized group of thugs who want to control all tin production and prices, and also kill any attempt to prospect or mine tin ores in these United States. But nevertheless *there is good tin ore* in the United States . . . ' (From column 'Getting Down to Bedrock With the Old Rockhound,' on editorial page of *The Mining Record*, Denver, Colo., Nov. 30, 1944). Ed. Note: See *The Technocrat* for August, 1941, 'The Great Tin Conspiracy.'

'We could have a national money income of \$300 billion a year and still be starving to death for lack of food. In 1923, just before the mark broke, the German national income was in the trillions, but the people were destitute, for their money would not buy anything.

'It is the same way with jobs. Full production and full employment . . . are not synonymous. The old WPA provided a great many jobs, but very little production. . . . it is entirely possible for us to have 55 or 60 million persons employed and yet have a declining standard of living.'—Sen. Kenneth S. Wherry (Nebr.) Jan. 18, 1945 (as quoted in *Vital Speeches of the Day*, Feb. 15, 1945).

Although originally designed to produce 80,000 tons annual capacity, the Institute, W. Va., butadiene plant is now delivering butadiene at the rate of more than 100,000 tons a year. Eight-tenths of a short ton of butadiene is required to produce one long ton of Buna-S synthetic rubber.



From John Atherton's Painting In The Universal Match Collection

Paleolithic man discovers fire. How? Where? When? Who Knows? The occurrence is lost in the mists of antiquity. The fact remains. The discovery and control of fire marked man's first success in the diversion of extraneous energy to his own uses. It set him apart from the lower animals. Paleolithic man was caught up in the resistless processes of change. He advanced one step. It's a long way back to the old Stone Age. But that is where the slow torturous march of technology began.



Photo: Courtesy Ford Motor Company

From a savage squatting beside a fiery stream of lava, to this 500-ton fast traverse is a far cry. The different is advanced technology. This press riveted fin bulkheads for B-24 Liberators. It completed two cars and drove 270 rivets in one operation requiring 5 minutes. Previous methods took 50 minutes. Press riveting eliminates warpage and greatly improves sheer strength. The latest war is over but the latest advances in technology remain. They represent a net gain from the war.



Official Photo U

Building B-29 bases in China. From here it is not such a far cry back to the Stone Age. The shorter distance is testimony to the voluminous philosophy and scanty technology of the Orient. The four-coolie distance of muscles here does not even equal $\frac{1}{2}$ hp. of mechanical energy. Philosophy and morality are not the basis of civilization. They are but evanescent opinions. Civilization is rooted in physical factors. It is nowhere so modern as where the most technology and extraneous energy are used.



Photo: Courtesy Aluminum Company of Canada Ltd

This is what we mean. Here is the switchboard in the control room at Shipshaw Plant No. 2, on the Saguenay River. With eight 100,000 hp. and four 85,000 hp. units, it is the world's largest single concentration of hydro-power. Control is simplified and coordinated into a one-man job. No coolie muscles, no toil, no philosophy. This is the application of physical laws to reduce man-hours of labor. That is the yardstick of 'progress.' How the Price System perverts it is another story.

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Photo: Courtesy Federal Power Commission

Winds have always blown over the earth. It was not until the 12th century that the first crude windmills appeared. This proposed dual electric generator perched atop a 500-foot steel tower is designed to produce 6,500 kw. in a 28 mph. wind. Current output is automatically regulated to the wind velocity. There is a 1,000 kw. unit in operation on Grandpa's Knob near Rutledge, Vermont. Wind energy is free. Construction of units is simple, operation automatic and maintenance cheap.

PHYSICAL OPERATIONS IN AMERICA

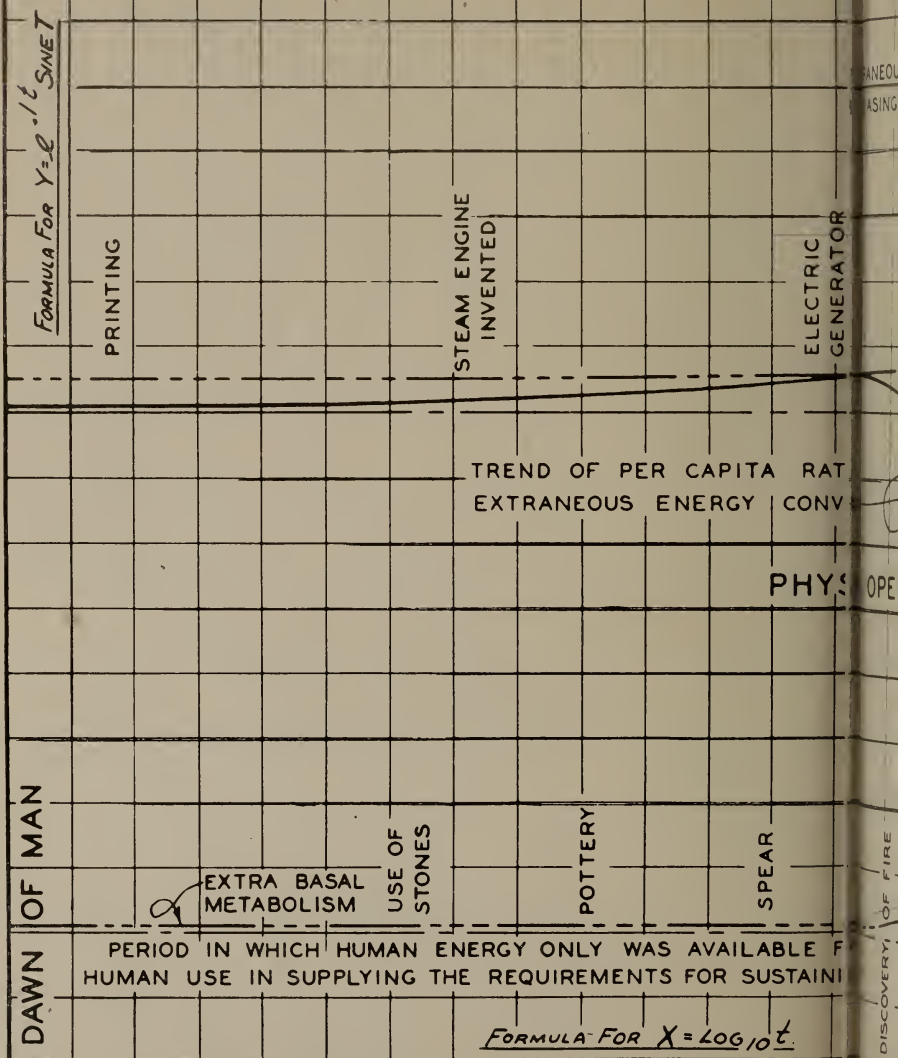
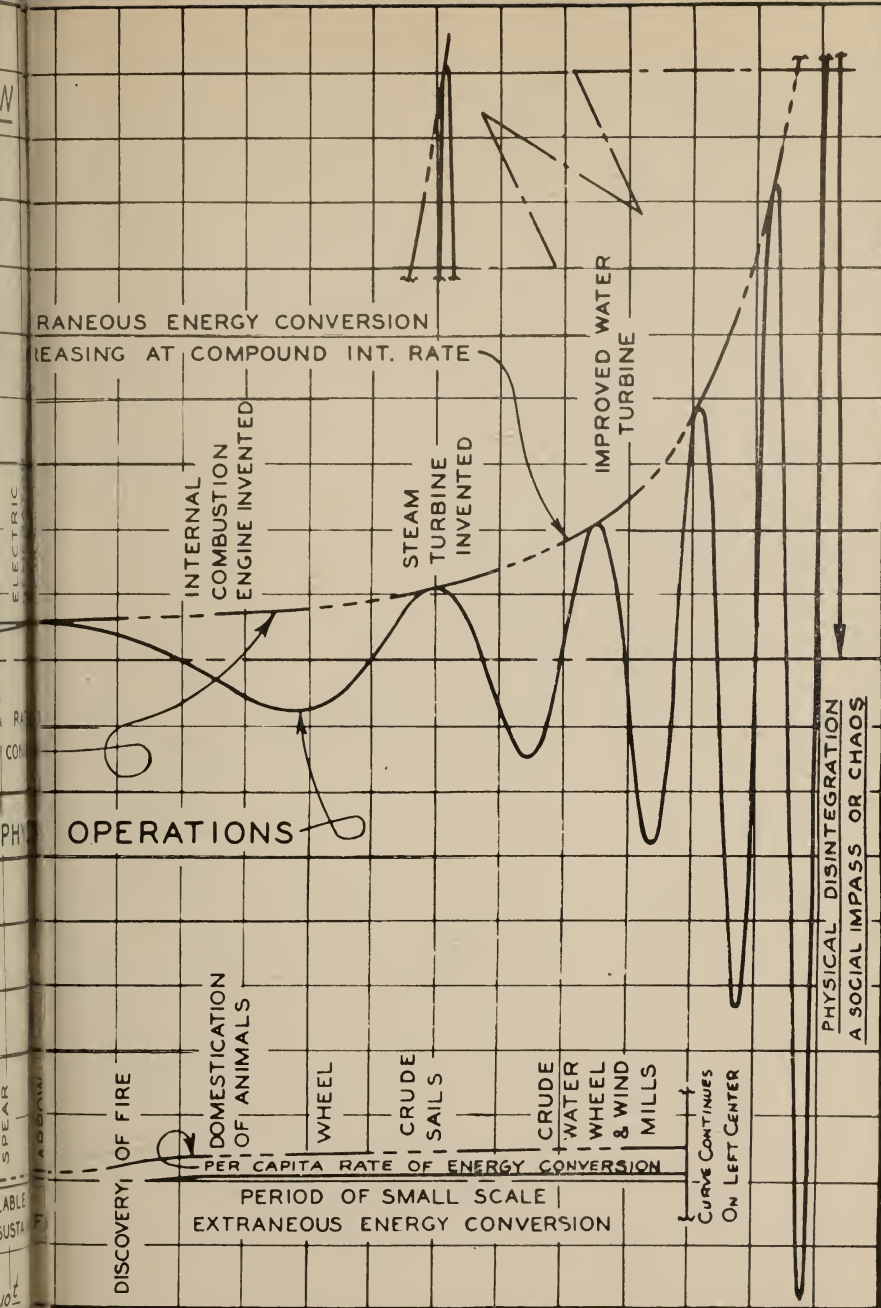


Figure 1: By Research Com. 8342-

This chart is divided into two parts. The lower part shows the non-oscillatory period of human society prior to the use of extraneous energy on a large scale. The lower part shows what has happened since then. The peaks show high points of production. The troughs represent shutdowns. Oscillations of this type are due to unbalance between production and distribution. A mercantile Price System is unable to distribute purchasing power so that the products of industry can be bought back on a balanced loan basis. With advancing technology productive ability outruns purchasing power.



With time, more technology and increased input of energy the unbalance becomes too great, a break occurs and production shuts down. An upward swing is started again by redistributing purchasing power. Soon the phenomenon re-occurs. The forces acting here are cumulative and self-regenerative, resulting in increased amplitude and frequency of oscillations. If continued, this process can end only in a complete shutdown. A scientific system of functional, non-price, social controls is required to operate a high energy social system on a balanced load basis between production and distribution.



Photo: Courtesy Automotive Council for War Production

'Bowed by the weight of centuries he leans.—The emptiness of ages in his face.' For thousands of years the productive ability of man was geared down to the power output of the human body. His cultural and social institutions also become geared to the age-old concepts of toil and scarcity. Today our productive ability is astronomical. Our social controls are still geared to those ancient concepts. Verily, they are full of the emptiness of the ages, ripe fruit of the Price System.

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In 1891 war supplies were hauled by this large horse-drawn truck. The Price System was just entering a great period of expansion borne on the growing wings of technology. It was not compulsory to solve social problems then. We could always conceal them in penitentiaries, insane asylums, potter's fields and legislative pigeonholes. Today we are still at the same old game. It won't work any longer. Social problems must be solved now. Technology is the Nemesis of all the time-tried rackets.



Photo: Courtesy Pennsylvania-Control Airlines Corporation

In 1945 many war supplies are sent by air. An electrically driven endless belt loads express, mail and baggage with a minimum of man-hours. By contrast with the preceding picture this one is a scene from a different world. And, so it is! North America has entered a new age. Upon our recognition of this fact rests our collective security. We are at the end of manipulation and obscurantism. The issue is clear cut. Technology will out, or else we go back a thousand years to a new delusion.



Photo: Courtesy Joshua Hendy Iron Works

The electric switch, symbol of the Power Age. Flick it on and the lights go up; the wheels turn. Snap it off and flow lines stand still; the lights go out. The switch knows not of philosophy, politics or business. It does not hear our prayers nor heed our yearnings. It just operates. That is physical law. Paradoxically, power will do everything we have always wanted done if we operate our social system by its design. In that fact is America's only salvation from the emptiness of the ages.



Photo: Courtesy Power Magazine

The Four Horsemen of the Apocalypse: War, Famine, Pestilence and Death. They have ridden over the earth time after time. Here, Philip Wylie's Fifth Horseman, full of pity, rides ahead to warn man of their coming. He failed, for pity is not enough. As long as the Price System exists, the Four Horsemen will ride again and again under its scourging banner. Science dictates a total break with the dead past, a new design of social operations. We had better listen. **INVESTIGATE TECHNOCRACY!**

The March of Power

By Research Committee 8741-1

One asks what was the total power consumption of the U.S.A. in the year 1937, eight years ago? It was of the order of 25,957 trillion B.T.U. of heat energy, according to the U. S. Bureau of Mines. What are the Bureau's figures for 1944, the all-time high year of America's war production? . . . 35,707 trillion B.T.U.

To translate British Thermal Units into the language of the layman, this amounted to approximately 14.4 trillion horsepower-hours, *1-2/3 billion hp. at work on the average every hour of the day and night*, most of it burned in the engines that drive our trains, factories, autos, ships, tractors, planes, mines and power stations. As the Price System's controls falter in

the ensuing months, the horsepower hours will probably decline rapidly.

In the largest industrial (installed factory hp.) city of the world, the Chicago metropolitan area, this energy conversion from coal, oil, gas and waterpower amounted to about 100,-000 hp.-hours per inhabitant for the year. (1944 estimate, based on 1943 figures given by Robert Brinton Harper, engineering vice-president of the Peoples Gas, Light & Coke Co., Chicago, at Midwest Power Conference April 13, 1944.) When it is realized that at best an adult human can convert food (fuel) into work at the rate of less than 1/10 hp. per day, then these figures indicate how closely tied Americans are to the March of Power.

Annual Supply of Energy from Mineral Fuels and Water Power in the United States—1944

Bituminous Coal	16,244,000,000,000,000	B.T.U.
Petroleum	10,067,000,000,000,000	"
Water Power*	3,989,000,000,000,000	"
Natural Gas	3,654,000,000,000,000	"
Anthracite Coal	1,753,000,000,000,000	"
Grand Total	35,707,000,000,000,000	"

*(At constant fuel equivalent of 4.02 lbs. coal per kw-hr.

	1943:	33,817,000,000,000,000	"
	1942:	31,995,000,000,000,000	"
	1941:	29,549,000,000,000,000	"
	1940:	27,327,000,000,000,000	"
	1939:	24,620,000,000,000,000	"
	1938:	22,765,000,000,000,000	"
	1937:	25,957,000,000,000,000	"
	1936:	24,367,000,000,000,000	"
	1935:	21,615,000,000,000,000	"
	1934:	20,413,000,000,000,000	"

—Source: U. S. Bureau of Mines.

Annual Supply of Energy from Mineral Fuels and Water Power Produced in Canada . . . 1944

Water Power	2,025,000,000,000,000	B.T.U.
All Coal	462,186,000,000,000	"
Petroleum	60,000,000,000,000	"
Natural Gas	49,450,000,000,000	"
Grand Total	2,596,636,000,000,000	"

Measured on a per-capita per-day basis, the extraneous energy consumption in the U.S.A. in 1944 was approximately 180,000 kilogram-calories. As Canada's total power consumption last year, based on fuel and waterpower figures given in *Canada-1945*, was close to 2,600 trillion B.T.U., the per-capita per-day energy amounted to about 148,000 kg. calories. Both countries' conversion of energy reached new historical high marks, and would have been higher if not for greater efficiency in the use of fuels and hydro-electric power in recent years.

Power is the steam roller of technology. Technology is the social mechanics of the Power Age. The wish-fulfillment of the masses, the sincerity of the reformer, the enterprise of the politician, the vision of our intellectuals, the pathology of our economists, are but gestures of futility,

straws in the wind, in the face of the march of power.

The soldier and the seer, the politician and the priest, the business man and the banker have ruled human society in every age until now. Technology in its march of power is serving notice on all of these, chiseler and sucker alike, that their day is passing, that a new order is clamoring at the gates. As technology moves up more power the gates will go down, and a new leadership of men and things will be given to the world. This leadership will spring from those of the trained personnel of this Continent who have the courage, capacity and discipline to administer and direct the technological application of physical science to the conduct of human affairs.'

(Howard Scott, Director-in-Chief of Technocracy Inc in *Technocracy* magazine, Series A, Number 9, February, 1937)

Science or Business

Scientists form the only group in society which knows that the concepts and ideas by which politicians and the accepted organizers of human relations are guided are mostly wrong, based on misconcepts, old superstitions, and false institutions. Yet the scientists have left not only the administration of, but also most of the study of the administration of human life and world affairs in the hands of people who know little, and who have been trained so poorly that they care still less, about what a century of progress in the science of life has achieved. Therefore, I cannot help feeling that we scientists are more truly responsible for the chaos of to-

day than any other part of society.

Franz Verdoorn, scientist and teacher, in *Science Illustrated*, January 1945.

'This war is being fought for freedom from political oppression, not for Freedom from work. . . . The only time the laws of economics can be suspended is during a war. . . . It's easy now for anyone to get and hold a job whether or not he does it efficiently and earns his pay. That time is almost over.'—Excerpt from a full page ad of Warner & Swasey, machine tool manufacturers, in *Newsweek*, May 8, 1944.

It takes ten pounds of milk to make one pound of American Cheddar Cheese. Moral, eat your milk, and let the other guy drink his.

Primer of Technocracy

By Education Division 8741-1

The Uniform Crime Report for 1944, issued by the F.B.I., lists a total of 1,393,655 major crimes in the United States in 1944. There were 76,091 crimes against the person, listed as murder, negligent manslaughter, rape, aggravated assault, etc. Crimes against property totalled 1,317,564, consisting of larceny, burglary, auto thefts, robbery, etc. From this it will be seen that offenses against property constituted more than 95 per cent of all the crimes reported in 1944.

What's Yours Is Mine

ACCORDING to this annual report, which is the best available authority under the Price System, only about 5 percent of all crimes are crimes of the emotions or passions. The other 95 percent were committed for the purpose of getting some one else's property. Obviously, the persons committing these crimes, except in the case of kleptomaniacs, must have felt a need to acquire more purchasing power. This is a point to be kept in mind.

As a whole, crimes against property show a decrease in the last three years, 1942, 1943 and 1944, as compared to the pre-war average of 1939 to 1941, except in the case of auto thefts. Robberies declined 13.2 percent; burglaries 8.9 percent; larcenies 13.3 percent. But, auto thefts increased 15.2 percent. It is an axiom that crimes against property decrease in good times and increase in hard times. However, you may say, times have been good the last three years. So, why should auto thefts increase? The answer is scarcity. This is a second point to be kept in mind.

The total registration of automobiles has decreased by 2,365,756 in the last three years. Autos have been getting scarcer. Ergo,, we have more auto thefts. Conversely, jobs have been more plentiful these last three years, resulting in more purchasing

power on the whole than in the prewar years. Ergo, crimes against property diminish. But, even with this augmented purchasing power the average man couldn't buy a new car in the last three years. So, according to the record, 97,081 of them just went out and helped themselves.

Crimes against property are a phenomenon within the framework of the Price System. The fact that they rise in hard times and fall in good times gives a clue to their motivating cause. In hard times, total mass purchasing power is lower than the usual low of so-called good times. Consequently, purchasing power as a whole becomes scarcer. This leads to crimes intended to alleviate that scarcity. In so-called good times, jobs become more numerous. Consequently, total mass purchasing power creeps a little bit upward out of its customary cellar. The need of alleviating a scarcity of purchasing power declines. As a result, crimes against property drop off.

The two main factors in the background of crime against property are scarcity and purchasing power. The relation between these two factors is the greatest single cause of this type of crime. Since any Price System must maintain a scarcity in order to remain a Price System, there is little prospect for this type of crime to decrease to any extent. Also, since no Price System can ever create a suffi-

ciency of purchasing power for all citizens, there is little prospect of help from that source. All the preaching and moralizing we can muster can do no more than make a dent in the crime total.

What's Mine Is My Own

An integral part of the Price System environment is the concept of property. In 1944 there were 1,317,-564 people in our right rebellion against that concept. They have no respect for it whatsoever. The best definition of property we know of is the one given by Lawrence T. Frank of the Rockefeller Institute. It is to the effect that property consists not in a physical object, but in a mode of behavior with respect to a physical object. Another way of saying this is that property consists in what society will allow an individual to do with what he owns.

In the North American Price System, a small minority own the means whereby the great majority must live. What society allows this small minority to do with the means of production and distribution is the determinant of the General Welfare of all the people. The Price System's code of property rights with its necessary concomitants of scarcity and low total mass purchasing power is the direct cause of crimes against property. If you want to get rid of this type of crime, you must remove the cause.

Technocracy's basic postulate is that nearly all phenomena involved in the operation of any social system can be measured. We can measure crime with the yardsticks of property rights, purchasing power and scarcity. But all we can do about it under the tyrannical restrictions of the Price System is to treat the symptoms. So long as scarcity, low purchasing power and private ownership and control of the General Welfare exists, a standing re-

ward is offered to all who can steal successfully. 'Withdraw the reward and these activities automatically disappear. It is the Price System itself and not the individual human being which is (primarily) at fault.'

The only way to solve at least 95 percent of our crime problem now becomes plain. It consists in reorganizing the entire social structure along technological lines. We must remove the price tag from the General Welfare. We must abolish scarcity and low total mass purchasing power. We must alter our collective social concept of property so that it becomes the servant of all and the master of none. This implies a thorough overhauling of our entire social structure and a realignment of it along technological lines. After all, why not?

We scrapped the windjammer for the steamboat; the pony express for the telegraph; the stagecoach for the railroad; the carriage for the auto; the horse for the tractor; individual fabrication for mass production; human toil for extraneous energy, and so on. Who is there so ignorant and stupid as to say that North America will not scrap special privileges for the few in favor of the General Welfare of all citizens!

It is not only the solution of our crime problem that is involved. By itself crime is only a minor part of the social problem as a whole.

If you define crime as being an offense against the welfare of society, then the greatest criminal of all is the Price System itself. When we solve the North American social problem as a whole, the crime problem will evaporate in the same way that the night dew evaporates in the morning sun. Let's quit philosophizing about crime and get down to the bedrock of social facts. 'All phenomena involved in the operation of a social mechanism are metrical.'

Technocracy and Your Trade

Power - Production - Employment

By R. F. Novalis

It's An Invisible Army

EVEN though we produced more than ever before in the wartime peak year of 1944, didn't we also employ more people than in any previous year? This is the comment commonly heard when the subject of technology is mentioned. The two answers to that fallacy explain why it has been possible for this Continent to raise its living standards above that of the rest of the world and at the same time win a World War, for the second time.

More Americans than ever before in our history were employed in 1944, but 10 million of them were turning out munitions. The important thing is that each operative produced more than he or his father or grandfather could turn out in the past per man-hour.

Greater use was made of existing machines, more machines were built and installed and more power-producing capacity was placed in operation than in any five-year period in our entire history.

In the four branches of industry, factories, farms, mines and railroads, which produce the bulk of our output, how has greater use of power enabled Americans to deliver more per man over the years? It is an obvious fact that our muscular strength certainly has not increased at all in the past half-century, nor in the seven centuries preceding that.

FACTORIES

Back in 1880 production of commodities per wage-earner was five tons per man-year. In 1930 this had increased to 22 tons per wage earner. (*Chicago Herald-American*, August

11, 1945.) Since we employed only 16 percent more people in 1940 than we did in 1930 to produce 38 percent more goods, productivity per man in 1940 was something over 25 tons, of ships, automobiles, refrigerators, hats, steel and the other things that America uses in peacetime. (Federal Reserve Board and Bureau of Labor Statistics)

James Watt's steam engine, patented in 1769, was first used outside of a mine in 1785 when a spinning machine was powered in an English factory. One of the direct causes for the American Revolutionary War was the attempt on the part of certain industrialists to keep the steam engine, or even drawings of it, on the other side of the Atlantic away from America.

By 1890 we had about 6,000,000 horsepower of prime movers (mostly steam engines) in our factories and 4,250,000 wage earners. The last census of manufactures in 1940, fifty years later, gave us only 1-2/3 more operatives but 8½ times as much installed horsepower; 7,880,000 employees and 51,000,000 horsepower.

Random comparisons can also be made of the difference in productivity as the inevitable result of using power driven machines to do work in place of human toil. Average working hours in Massachusetts' textile plants back in 1840 were 14 per day. In 1860 at the outset of the Civil War, national average factory hours were 66 weekly. This went down to 60 in 1887, to 57 in 1907 and to 38 in 1940. In 1863 it required 18-1/3 man-hours to manufacture a pair of men's shoes. By 1895 this had been cut to 2½ man-hours through the introduction of automatic machines.

The same trend has occurred in

'new, technological' industries. In 1920 we produced a third of a billion of electric light bulbs with 17,000 wage earners. In 1939 General Electric alone made 970,000,000,000 bulbs, but not with the 51,000 people that would have had such jobs if technology had not been introduced. Less than 5,000 people were needed to produce 970,000,000,000 bulbs. he other 46,000 persons joined the ranks of the approximately 8,800,000 unemployed in 1939. (National Conference Board data.)

A glass factory workman in 1838, just a little over a century ago, worked 12 to 14 hours a day in order to blow 216 four-ounce bottles. (*Scientific American*, September 1945). The 1945 glass plant operative doesn't blow out his lungs, he simply presses a button, and machines, devised by technologists, turn out 216 bottles that size in three minutes.

FARMS

Tractors produce no crops. They are the prime movers which pull plows, combines, harvesters and other machines which today do the work of growing food and fiber. Between the time the Pilgrims landed in 1620 and the turn of this century, oxen and horses pulled what crude implements the pioneer farmers had.

In 1914 we had 10,000 tractors on our farms. By 1930 only 13½ percent of the farms were supplied with tractors. The 1940 census showed 23 percent of the farms with tractors. Today we have over 2,000,000 tractors and fewer people employed on the farms than in 1914.

In 1830 it took 64½ man-hours to produce an acre of wheat; today it takes 2½ man-hours. (International Harvester Co. data.)

In 1880 one-half of all the wage earners in the United States were still employed on farms. In 1940 only

22 percent of all wage earners remained on farms.

In 1942 farm crops of the nation were harvested with 26,000,000 fewer persons than would have been required if 1840 methods were still in use. (*Automotive War Production Bulletin*, February 1944). When it is recalled that total 1942 farm employment was only 10,000,000 persons, the comparison is not so startling in view of the increase in tractor use.

RAILROADS

In 1855, before the first transcontinental railroad, you would have spent 28 days crossing the United States in a coach. Today it is done by rail in less than 56 hours. The all time high of people 'working on the railroad' was reached in 1920 with 2,220,000 employed. This fell to 1,660,000 in the boom year of 1929, when nearly 10 percent more freight was carried than nine years before. This last statement signifies the change in productivity due to more efficient locomotive boilers, more automatic coal-loading and track laying machines and scores of other technological changes.

In 1944 rail freight load reached an all-time peak of 740,000,000,000 ton-miles, or 60 percent more than 1929's load, and the 1,044,000 employees was still far under the 1929 level.

MINING

Fifty-five years ago our 21,800 mines and quarries employed 542,500 miners, who worked with tools powered by 1,300,000 horsepower of prime movers, or less than 2½ horsepower per man. By 1940 the number of mines had decreased one-half to 10,800, the miners increased less than one and one-half times to 705,800, but installed horsepower jumped nearly ten times to 12,100,000 horsepower. The inevitable result is as follows:

Mine Output Per Man-Year, U.S.A.

	1870	1929	1941
Coal, bituminous and anthracite	300	900	1,000 tons
Copper	5,000	45,000	88,000 pounds
Iron Ore	300	2,500	3,300 long tons

(Sources: 'Technological Trends and National Policy'
and U. S. Bureau of Mines)

There's Only One Way

All in all, back in 1890 before the advent of the gasoline engine, the United States had less than 50,000,000 mechanical horsepower installed to drive its mines, factories, farms, ships, trains, vehicles and power plants. (*American Economic Review*, September 1933.) Today, with total employment approximately twice what it was a half-century ago, we have close to 2,000,000,000 horsepower, not including another billion horsepower built for the Army and Navy's use on the fighting fronts. (*Popular Mechanics*, April 1945.)

The future of this Continent lies in a continuation of this process; more goods with more power and less man-hours of labor. Under the Price System the use of more power with less

man-hours of labor means more unemployment, more debt and taxes, more crime, more malnutrition, and more sudden death on the home front. In a Technocracy, or a Technate, the same trend would result in security and abundance. There are no other alternatives.

The Power Age has arrived in North America, and within the next decade the Power Age will dominate this Continent from the Panama to the North Pole. Power is the steamroller of technology. Technology is a jealous god. Technology will tolerate no false gods.

HOWARD SCOTT, Director-in-Chief,
Technocracy Inc. in *Technocracy*
Magazine A-9, February 1937.

You'd Think They'd Know Better

'We are greatly pleased with our new Winton. There may be improvements yet to come in such autos, but it is difficult to see much room for them.'—Andrew Carnegie, in 1905, as quoted in the *University of Knowledge* by Glenn Frank.

'The car I now bring out is considered by me as pretty close to finality—so close that I call it "my farewell car." I shall let it stand as my topmost achievement.'—R. E. Olds, pioneer designer and manufacturer of automobiles in an advertisement in the *Scientific American*, Jan. 6, 1912.

'I want to be on the safe side. Nearly all the inventions that are possible have been invented. Soon there will be no more, and this office will have to close. I want to get into something else now while I have the opportunity.'—A Clerk in the Patent Office before the turn of the century, as quoted in the *University of Knowledge*, by Glenn Frank.

'Man is a Tool-using animal—nowhere do you find him without Tools; without Tools he is nothing, with Tools he is all.'
—Thomas Carlyle in *Sartor Resartus*.

Technology Marches On

The Pace Is Accelerating
By Research Division 8741-1

PRINTING

Printers on the *Jersey Journal*, Jersey City, N. J. went on strike June 12, 1945. They stayed out all during June, July and the first week of August. The newspaper got out a weekly 'photo-engravers' edition without employing any printers.

On August 10, 1945, Rudolph E. Lent, business manager of the paper, made the following announcement in the weekly 'photo-engravers' edition:

The *Jersey Journal* is investigating a new method of producing its publication. It is expected that by next week it will be possible to produce the first publication utilizing this method. A product with news and features closely resembling the normal issue will result, followed shortly thereafter by inclusion of regular classified and display advertising.

On August 16, 1945 the 40 printers on the *Jersey Journal* voted to go back to work. Printers on the *Bayonne Times*, Bayonne, N. J., who were also out on strike, also voted to go back.

The *Birmingham Post*, the *Birmingham News* and the *Age-Herald*, all of Birmingham, Alabama, were closed down for five weeks between July 11 and August 15, by a strike of union printers.

On August 15th the *Birmingham Post* published a four-page photo engraved edition. The *News* and *Age-Herald* were planning a similar combined edition. On August 16 the printers of all three papers voted to go back to work.

In 1940, the T.N.E.C. Monograph

No. 22 had the following to say in regard to the advance of technology in the printing industry:

The ultimate development would be the development of a photographic method of printing. This development awaits only the invention of an adequate method of preparing the negative and an inexpensive sensitizer. If the photo-engraving process were to replace printing as the facsimile machine threatens to replace the teletype system, labor in the printing trades would be almost completely eliminated.

For a more complete analysis of technology in the printing trades, see *The Printing Industry Worker in the Great Lakes Technocrat*, May-June 1945, issue No. 73, page 43.

AGRICULTURE

A new cranberry harvesting machine is based on the vacuum cleaner principle. The device draws the cranberries through two hoses. A separator draws off leaves and twigs which are dropped into a bag. The berries are passed through a hopper, which grades them for size. The harvester is operated by 3 men and is said to do the work of 30 hand pickers. (*Business Week*, January 6, 1945).

Ed. Note: See Changing Agriculture in *The Technocrat*, January 1940, page 15.

Forrest Woods of McLean County, Illinois, was high man in the 1944 Illinois Ten-Acre Corn Growing Contest, with a yield of 182.05 bushels per acre of No. 2 corn. (*Fortune*, April 1945). *Ed. Note:* See Technocracy Study Course, page 258.

AVIATION

The Central Aircraft Corporation of New York has developed a flying wing. It is more commonly known as the Burnelli Flying Wing. Vincent Burnelli is president of the company. On August 16, 1945, Clyde Pangborn, famous pilot, who made the first non-stop flight across the North Pacific, put this flying wing through its paces. The test took place near Montreal. The craft weighs 27,000 pounds and the fuselage, being designed as part of the wing, provides 60 percent of the craft's lifting power. It took off after a run of only 650 feet. With a full load of four tons, it can take off in less than 800 feet. The wing can also land within 800 feet, or less. The center portion of the wing, or fuselage, is 20 feet wide, 30 feet long and 7 feet high and accommodates 22 passengers comfortably. Overall wing span is 86 feet and it is powered by two 1250 h.p. engines. Top speed is 215 miles per hour and cruising range 1500 to 2000 miles. The tail is a twin boom assembly. Although not an extra large plane, the wing's ability to take off and land from short runways gives it a tremendous advantage over conventional planes. (Data from *Chicago Tribune*, August 16, 1945.) *Ed. Note:* See *Technocracy Magazine* A-21, published November 1941, page 21.

PAPER PRODUCTION

The paper and pulp industry is producing more paper than in 1942 with 10 percent fewer employees in mills, the American Paper and Pulp Association announced today. Production per employe increased from 98 tons in 1939 to 117 tons in 1944, the association said.

Chicago Sun, March 11, 1945.
Ed. Note: See *Technocracy Study Course*, page 118.

SCRAP ALUMINUM

The problem of recovering aluminum from complex scrap materials, without being forced to sort out the non-aluminum parts, has been solved. The process also separates the aluminum from admixed alloying substances. The resulting product is the same as aluminum manufactured from bauxite. The process uses a caustic soda which dissolves the aluminum but not the non-aluminum parts and alloyed substances. By filtering, the solid impurities are then removed and the residual liquor manufactured, by the Bayer Process, into pure aluminum oxide. 'It was stated that the new process makes possible the conservation of the country's high grade bauxite reserves, and of more importance, the man-hours required to mine bauxite.' (*Wall Street Journal*, May 8, 1945, italics ours.) *Ed. Note:* See *Technocracy Study Course*, chapter 13.

AIR FRAME MANUFACTURING

The peak of total employment and total man-hours of labor in the airframe industry were both reached in November 1943. The peak of production was not reached until March 1944. Thereafter, until May 1945, production declined gradually but in the latter month it was still higher than in November 1943. Total employment and total man-hours declined much more rapidly between March 1944 and May 1945 than production did. Output per man-hour, however, continued to rise rapidly.

The Airframe Industry assembles complete planes and manufactures component parts for the airframe portion of planes, excluding the production of gliders, motors, propellers, etc.

Taking January 1942 to equal 100, the Bureau of Labor Statistics' Productivity and Technological De-

velopment Division index reads as follows:

	Production	Total Employment	Total Man-Hours	Output per Man-Hour
January 1942.....	100	100	100	100
November 1943.....	663.4	305.1	290.7	228.2
March 1944.....	842.3	285.2	273.0	308.5
May 1945.....	667.0	202.5	193.8	344.2

Continued on page 12

Output of airframe per man-hour tripled during the three years following the attack on Pearl Harbor. Immediately after the war, a sharp decline in aircraft production is expected. A decline in productivity is also probable, since the industry will lose some of the advantages of standardized pro-

duction in huge volume when output is reduced. On the other hand, productivity should remain well above prewar levels, because of the substantial technical advances in manufacturing methods achieved during the war. (*Monthly Labor Review*, August 1945). Ed. Note: See *Man-Hours and Distribution*, Part II, page 7.

ENGINEER'S WORTH TO SOCIETY

Continued from page 12

within 24 hours. Telephones and radio would be replaced by the next highest speed communication system known in the past as wig-wagging, and the baby being born in the maternity ward would arrive in the world under approximately the same intensity of illumination as did his great-grandfather, 150 years ago. If we were to do away with electricity we would be back where we were 150 years ago.

Purpose of Engineering

The engineer has provided a power supply system which has made cheap energy available to nearly everyone. He has provided transportation systems of many forms. He has provided communication systems that have surpassed human concepts of a hundred years ago. However, the *main* purpose of all of this engineering is not to provide a comfortable existence. Engineering has a deeper meaning than the mere utilization of resources. Engineering is an instrument of "Social Progress." History has shown that the

great advances in literature, art and philosophy have been made by a comparatively few people who have been provided, through the economic and social systems in which they lived, with the opportunity to devote their time and energies to such advancements. In the early days this meant that many slaves were required for every scholar or member of the "intelligentsia" who was not devoting his time to the process of earning his own living. Today engineering achievements are providing an average equivalent of 50 slaves for every man, woman and child in this country. In so doing engineering has given nearly all of our people the opportunities for an intellectual development that heretofore was restricted to a very few. Thus we see that engineering is not only necessary if our American way of life is to be continued, but it is also a key to Technical, Social and Economic Progress.

Just how engineering will fit into our social order of the future is hard

Continued on page 50

Each in His Own Tongue—

By Publications Division 8741-1

VOICE OF THE PRICE SYSTEM

FOOD

It is quite probable that never in recent history has the nation been as well fed, considering the population as a whole. It is only natural that those groups of the population whose consumption has normally and habitually been relatively high should experience the illusion that there is a food shortage.

From *Business Conditions*, published by the Federal Reserve Bank of Chicago. (As reported in the *Chicago Sun*, July 1, 1945.)

FREE ENTERPRISE

During the war we have gotten away from the American idea of free enterprise and equal opportunity. The kind of conversion upon which I would like to see us center our attention is reconversion to the belief in the American way of life, the way under which we grew strong and had a capacity—though utterly unprepared—to win this war.

John M. Hancock, a partner in the investment banking firm of Lehman Bros., at a dinner meeting of the Economic Club of Chicago, December 11, 1944. (As reported in the *Chicago Sun*, December 12, 1944.)

DEPRESSIONS

... depressions are never abolished because they have many desirable features. Smart folks take advantage of the boom. They save what they can and keep their savings liquid. They are then ready for depression-

time bargains in every conceivable thing from a suit of clothes to a railroad.

Ralph M. Blodgett, advertising executive, of Des Moines, Iowa, in an article published by the Bureau of Economic and Business Research, College of Commerce, University of Illinois (as reported by Sydney J. Harris in his column 'Strictly Personal' in the *Chicago Daily News*, August 22, 1945.)

HOUSING

If we don't get rid of OPA rent restrictions we will not have much new residential construction. . . . Builders are ready to break ground for new projects, but they are tired of controls and programming and must be assured of freedom from restrictions.

Joseph E. Merrion, president of the National Association of Home Builders, and Floyd Dana, president of the Chicago Real Estate Board. (As quoted from an interview by Al Chase in the *Chicago Tribune*, August 18, 1945.)

WARFARE

War is a business, and to be successful it must be conducted on a profit and loss basis like any other business.

Al Williams, Military Expert of the Scripps-Howard papers in his column in the *Washington Daily News*, June 4, 1945. (As quoted by the Peoples Lobby Bulletin for July 1945.)

EMPLOYMENT

... in any case, full employment requires a perfection of

management that we have no right, in a democracy, to assume.

By the Editors of *Fortune*, in 'Transition to Peace; Business in A.D. 194Q' in *Fortune*, January 1944. (As quoted in the *Economic Outlook*, published by the CIO for June 1945.)

POLITICS

Let private enterprise remain but it's got to be enterprise. There is only one justification for either nationalization or private ownership—that is efficient service in the interest of the nation.

Herbert Morrison, lord president of the council in Britain's labor government, in a broadcast to America July 18, 1945. (As reported in the *Chicago Tribune*, August 19, 1945.)

ANTI-CONSERVATION

. . . in reality (TVA) is an anti-social institution, its evil effects far outweighing any social

progress and reform it professes to have promoted.

Andrew Jackson May (Dem. Ky.), Chairman of the House Military Affairs Committee in the July 1945 issue of *National Republic*. (As reported by Carleton Kent in his column in the *Chicago Daily Times*, July 7, 1945.)

CLERICALISM

With the cooperation between the South American countries increasing, French and English Roman Catholics in this country along with the Catholics of the United States and South America will be able to establish an order based upon the ideals and traditions of Christianity.

Father A. L. Davis of Ottawa University in a speech before a Catholic Youth Organization, quoted in the *Ottawa Journal*, January 19, 1942. (As reported by the *Converted Catholic* for June 1945.)

VOICE OF TECHNOLOGY

SOCIAL CHANGE

We are going to stand alone for the principles of free enterprise. And how long can we stand alone? Perhaps five or ten years. The handwriting is on the wall. . . . The days are not far off when the masses in our country may say: 'You and your systems have failed.'

Daniel J. Tobin, president of the International Teamsters Union. (As reported in the *Chicago Sun*, August 19, 1945.)

RACIAL STRIFE

Negroes and whites can never get along in a society such as ours based on competition and stratas

of importance in social and economic life.

Dr. Mandel Sherman, professor of educational psychology at the University of Chicago, speaking before the women's division of the Chicago Urban League, January 23, 1945. (As reported in the *Chicago Daily News*, January 24, 1945.)

EDUCATION

In our education we have ignored existing evils. We have presented to our children a system supposedly perfect. Our educators and citizens have lacked the courage to stand up against the opposition of those who would profit from suppression of essential facts. For years we have

seen the finest flower of our youth, graduates of our schools, universities, and law courses, those who might have shown private initiative, seduced and prostituted to the purposes of greed in the service of great corporations and financial institutions. Robots and hypocrites resulted.

While our schools and universities are dependent upon politically controlled legislators, or plutocratic donors through the great foundations or financial institutions, they must first meet the needs of those who feed them, rather than those who come to be fed. . . . When our educational system and its processes are investigated as the anthropologist investigates the cultures of other peoples, we shall see that we have no system, only an accumulation of anachronisms, of vested interests, of medieval leftovers. We shall discover that its processes are without biological orientation, that our educators have been engaged in hopeless, destructive fumbling in the dark jungle of what we call our intellectual life toward ends that are non-existent, towards goals that are mere will-o'-the-wisps.

Porter Sargent, outstanding educational leader in his book, *Between Two Wars* (The Failure of Education, 1920-1940). (As quoted in a review by W. C. Clugston in *The Progressive*, July 23, 1945.)

DEPRESSIONS

Depression was our number one problem, and it was still unsettled. The war temporarily solved it. When the war ends it is not safe to assume that we

will not find this same problem waiting for us after the obvious and immediate job of reemployment has been done.

John Maurice Clark, professor of economics at Columbia University. (As quoted in an editorial in the *Chicago Daily News*, February 14, 1945.)

THE ATOMIC BOMB

Classical economics and politics are out of the window. There won't even be any debate about 'private enterprise' in relation to this thing. It cannot be controlled by any group of people for their own profit. At one step, the state, dislike the thought as we may, becomes the only possible trustee of this tremendous power and, therefore, assumes an importance never before known in history.

By an unnamed correspondent, as quoted in *The Trading Post*, a department of the magazine *Business Week*, in its issue of August 18, 1945.

ATOMIC POWER

The energy liberated by the uranium fission will, it is to be hoped, in the years to come find application in power plants, thus raising the prosperity of all nations through collaboration and thereby also stimulating progress in the higher sense of the word.

Lise Meitner, famous Jewish woman physicist (who contributed signally toward early efforts to split the atom in Europe) in an article in the *Chicago Sun*, August 22, 1945.

The oil required to fill the tanks of a single battleship would heat the average home for 20 years.—*Chicago Sun*, Sept. 3, 1945.

So Wags the World—

Fascism (Social Reaction)

vs.

Anti-Fascism (Social Advancement)

By Research Staff of Great Lakes Technocrat

With this issue GREAT LAKES TECHNOCRAT presents a new department. It consists of a digest of some of the more important fascist and anti-fascist social events occurring around the world. Standard Price System sources of information are used. In order to save space, these will not be quoted, but kept on file for reference. The incidents cited are mostly of the type played down by the Price System press. Therefore, they have not had wide circulation. The purpose here is to provide our readers with factual information of events on the world stage, so that they can evaluate the forces of fascism and anti-fascism in North America. At home or abroad, fascism is a menace to the Power Age civilization of North America.

NORTH AMERICA

The State Department recently published a 2,000 page report on American foreign relations in 1930. The chapter on Germany is very revealing. George A. Gordon the American charge d'affaires, at the time, wrote Secretary of State, Henry Stimson that 'Hitler received very substantial financial support from certain large industrial interests' in Germany. He also wrote that he had heard that 'Certain American financial interests' were actively backing Adolph Hitler and his Nazis as a means of combating trends toward socialism in Germany.

The 1945 census of Agriculture shows that the number of farms in the U.S. is still decreasing and that the average size of farms is still increasing. Two thousand out of the 3,087 counties report that the total number of farms dropped from 3,759,199 to 3,717,497 or 1.1 percent. Farm acreage in these counties rose 7.5 percent and average size of farms rose from 170.9 acres to 185.8 acres. The number of farms in Illinois dropped from 213,439 to 206,481. The aver-

age size of farms in Illinois is 153.2 acres. This is an increase of 5.4 percent in size of the average farm over 1940. The fact that the average size of farms in Illinois is smaller than the national average is accounted for by the addition of 600,000 acres to the State's croplands since 1940. Even at that there were 6,958 fewer farms in Illinois than in 1940.

CANADA

A statement prepared by a special committee and read at the 21st Conference of the United Church of Canada recently stated: 'We have reason to believe that many Roman Catholic clergy are being exempted from certain income tax obligations and we believe it is the responsibility of all clergy to pay such taxes in accordance with government regulations.'

The Canadian Army Newspaper *Maple Leaf*, published in Holland, proposes that Canada adopt a national flag and a national anthem. Said the *Maple Leaf*: 'There are some who would cry treason as soon as any one

suggests changing from the Union Jack and "God Save The King." That is their privilege. But it is foolish to regard as treason a desire for a country and a people to wish to identify themselves among nations, to strengthen the framework of national unity.'

The account gave some views of Canadian soldiers. Said a Lieutenant from Toronto, while stationed in Holland: 'I've not seen anything on this side of the Atlantic that's worth fighting to perpetuate.' Said another: 'The United States and Canada can keep to themselves and let tottering old Europe topple. We've lots of room in America for better Europeans who want to leave this antiquated ship.' Many similar statements have been made by Canadians in Holland. Several said that they favored a union between the United States and Canada.

SOUTH OF THE RIO GRANDE

In North America, north of the Rio Grande, the illiteracy rate runs about 6 percent and the illegitimacy rate around 2.4 percent. South of the Rio Grande, including all of South America, the illiteracy rate runs from 60 to 80 percent of the population and the illegitimacy rate from 25 to 50 percent. By their works shall ye know the fascists!

ARGENTINA

Testifying recently before a Senate sub-committee, headed by Harley M. Kilgore (Dem. W. Va.), William L. Clayton, Assistant Secretary of State, stated that there were 104 business companies in Argentina which are known centers of espionage or other aggressive activity, i.e., German and other fascist activity. So far the Argentine Government has not moved against a single one of them.

A foreign correspondent for a Chicago paper reports that there is a

vigorous and growing underground movement in Argentine opposed to the government. It publishes six newspapers, which are circulated clandestinely. The movement is called Patria Libre. Estimated membership is 50,000, which, however, is almost totally unarmed. Over 1000 members of the underground are in prison at the present time.

BRAZIL

Monsignor Carlos Duarte, Bishop of Maura, was excommunicated from the Roman Catholic Church recently. His crime was openly to criticize the Vatican's policies. Bishop Duarte said he objected to the 'fascist infiltration of the clergy.' He stated his aim as being a church 'that will not feed on politics, as the Roman Church has since the third century.' Bishop Duarte has started a church of his own.

The Volta Redonda steel plant, the largest in South America, will be a fully functioning enterprise before the end of 1945. The prewar per capita consumption of steel in Brazil was 22 pounds. In the U.S.A. it was 880 pounds. In 1942 all Brazil's steel mills turned out only 160,000 tons of steel. In the same year the U.S.A. turned out over 80,000,000 tons. Volta Redonda will have an initial capacity of 1,000 metric tons daily. Ultimate capacity will be 1,000,000 tons a year.

COLOMBIA

In the summer of 1942 President Alfonso Lopez of Colombia was kidnapped. A number of Army officers were convicted of being implicated and sent to prison. On May 30, 1945, three men were arrested by the police of Bogota as they left a house on Carrera Cuarta.. They carried handbags which contained 18 revolvers. 200 cartridges, 1,000 pesos in cash and a 'series of compromising docu-

ments.' On June 1, 1945, fourteen imprisoned Army officers revolted and seized the prison where they were doing time for one or another attempt to overthrow the government. The revolt was quashed. In the middle of June 1945, bitter demonstrations broke out between the students of liberal National University and students at Jesuit Universidad Javeriana. President Lopez declared a state of siege. In the last two years, eight attempts have been made to overthrow the government. In March 1945, the government reported finding 1,000 bombs hidden in the cathedral at Bogota.

PERU

On January 7, 1945, the government of Peru issued a decree ordering that: 'All religious activities other than those of the Catholic (Roman) Church must be held inside the churches of the respective denominations.' The decree was based upon a constitutional provision 'permitting religious freedom but protecting the Catholic (Roman) Church.'

Peru is undertaking a large industrial development program. The program includes full development of the power potential of the Santa river, Peru's largest west coast stream. Work has begun on the 125,000 kilowatt Canyon del Pato project. In 1941 Peru's total installed power capacity was 219,746 kilowatts. In the U.S.A., for the same year, it was over 44,000,000 kilowatts. Full development of Peru's program envisions:

1. Development of anthracite reserves in the Santa valley, estimated at 10,000,000 tons.
2. Steel plant construction at Chimbote.
3. An irrigation project to fertilize 250,000 acres.
4. A cement mill and other industries based upon minerals said to exist

in this region. An export-import bank credit has been set up in favor of the Banco Central of Peru to finance purchases in the U. S. of materials and equipment required for the program.

EUROPE

GERMANY

Dr. Gerhard Alois Westrick, who was expelled from the United States in 1940 as being a Hitler emissary, is now directing efforts to salvage and revive German industry. Dr. Westrick was installed in his job by a Count Douglass, a British Associate of the International Telephone and Telegraph Company. Recently Dr. Westrick conferred with two higher officials of I.T.&T. at Schloss Langerstein in Baden. The I.T.&T. controls the Standard Electric Company of Berlin, Germany, whose president is Dr. Gerhard Alois Westrick.

During the war, the headquarters of the German General Staff was officially supposed to be in the center of Berlin, in the General Staff Building. Actually, this official headquarters was only a false front. The real headquarters was in the village of Zossen, a suburb of Berlin. Here the General Staff officers lived and worked in completely equipped and appointed quarters deep underground. Elevators led down to the offices and living quarters, from heavy concrete structures on the surface cleverly concealed in a patch of forest. The Red Army seemed to know all about this. When they moved in, they came so fast that they captured the entire installation intact. The Staff officers had fled, of course, but the technicians, who serviced and operated the complex radio, telegraph, telephone, air-conditioning, lighting and other apparatus, remained.

Hans Beltow, a German engineer, waited at the surface entrance for the

Russian soldiers. He conducted them cheerfully underground. The elevators were not working at the time so they descended by means of a spiral staircase. Down below, corridors led in all directions with rooms opening off the hallways. In the technical operating rooms there were crudely lettered signs, hanging from the apparatus at several points. They were printed in bad Russian and said: 'Soldiers, don't touch or damage the apparatus. It will be valuable booty for the Red Army.' The notices had been placed there by German technicians. And, where were these engineers and technicians? They had hidden themselves deeper underground in the huge safe of the Time Bureau, while the officers and auxiliary personnel of the General Staff were fleeing. They reasoned correctly that they had nothing to fear from the Red Army.

ENGLAND

On August 21, 1945, Dr. J. W. C. Wand was consecrated as Bishop of London for the Church of England. Two formal protests to the appointment, on the ground that Dr. Wand was a 'Roman Catholic and not a fit and proper person for the position' were presented to Vicar General Philip Baker Wilbraham in the vestry before the ceremony. When the procession entered St. Mary's Woolnoth Church, disorderly demonstrations broke out among the onlookers. Two hundred persons shouted, 'You are hirelings of Rome,' disturbing the consecration. The protests subsided only at intervals during the ceremony.

Ministry of Agriculture figures show that 600,000 less acres were farmed in the United Kingdom during the war than in the prewar years. Production of wheat, barley and oats was 3,500,000 tons greater, however, than in 1939, potatoes 4,500,000

tons greater, and a quarter million tons more sugar beets were raised. In 1944 the wheat crop was 82 percent above the 1939 level; barley 89 percent; oats 64 percent; rye 625 percent. In October 1944, Britain had 9,548,000 head of cattle, more than ever before in her history and fresh milk going into consumption was 37 percent more than in the last prewar year. The British Iron and Steel Federation has announced a five year program to extend steel production in Britain from 14,500,000 tons a year to 17,500,000 tons. Ten new blast furnaces are projected. When completed, there will be a total of 120 furnaces.

ASIA

CHINA

The United States loaned China \$500,000,000 in gold to help stabilize its inflated currency. The Chungking government adopted a policy of selling some of this gold from time to time so as to retire some of the surplus currency notes inflating the money market. The price was set at 20,000 Chinese dollars for one ounce of gold. This deflationary operation proceeded satisfactorily for a while. Then the Chungking government decided to speed up the deflationary process by raising the price of gold. Some insiders, carefully covered up, got wind of the government's plan. They passed the word to speculators. These chisellers hastened to buy up all the gold they could get for 20,000 dollars an ounce. A few days later, the government announced the new price of 35,000 dollars an ounce. Ergo, the gents who thriftily bought gold at 20,000 dollars an ounce turned right around and sold it for 35,000 dollars an ounce. The pro-fascists of Chungking cleaned up millions on the deal. And what of our Uncle Samuel and his efforts to stop inflation in China?

Don't worry about that. The beneficence of that old gentleman with the whiskers passeth all understanding. That's the Price System for you.

John Lucian Savage, chief designing engineer for the Bureau of Reclamation, was 'loaned' to China to investigate the possibility of building a gigantic dam on the Yangtze, the world's fourth longest river. His report was favorable. Savage designed Grand Coulee, Boulder Dam and sixty other dams. He is considered the world's greatest authority on hydroelectric projects. The site for the proposed dam is at Ichang, east of Chungking. Ultimate capacity, it is said, will be 10,500,000 kilowatts. Another 2,500,000 kilowatts could be developed on tributaries. Boulder and Grand Coulee combined are 2,353,800

kilowatts. It is said the dam would generate electricity incredibly cheap, would end the annual Central China floods, double crop production on 10,000,000 acres of farm land and permit 10,000 ton ships to come to Chungking, 650 miles from the ocean. Said Mr. Savage: 'With the possible exception of some tributary of the Amazon, this is, beyond all question in my personal experience, the greatest single potential source of hydro power in the world today.' The question of what a nation of 450,000,000 with a handicraft-agrarian civilization could possibly do with vast amounts of cheap electric power has not been answered. One suggestion is that it be utilized to make fertilizer to sell in the Orient so as to help raise more food. *Ed. Note: See Technocracy Study Course. Lesson 8.*

ENGINEERS WORTH TO SOCIETY

Continued from page 42

to say. But there is no reason to believe that progress is over. The fields of research have not been harvested. Science is not limited to the past. Knowledge stands before us like the Rock of Gibraltar and is just about as hard to penetrate. Every few years some rugged individual with plenty of originality, foresight and initiative appears on this rock with an ample supply of intellectual dynamite and proceeds to blast away some huge chunks. Then a lot of lesser individuals come along with their special tools and pick away at the pieces. Men who have blasted away some sizeable chunks are well known. When Edison invented the incandescent lamp he started the electric power industry which now has an annual revenue of two billion dollars. Bell with his in-

vention of the telephone started an industry that has revolutionized the country and at the present time employs 450,000 people. That is Engineering. When Westinghouse developed his A.C. system of transmission he made possible the use of energy in one part of the country from a source in another part. That is Engineering. When Kettering invented the electric starter for the automobile he placed under the hoods of American cars more H.P. in the form of starting motors than is installed in all the power houses in the country and at the same time prevented the breaking of 60,000 human arms annually. This is Engineering. Now all of these contributions are fundamental and they are all alike in one respect. They have lead to greater human happiness.

In the Question Box—

By Speakers Division 8741-1

Dears Sirs:

I am only a high-school student, but I am in sympathy with the program of Technocracy Inc. I have received two issues of your magazine from local section headquarters. I have enjoyed all of the articles and departments, and think you have an excellent magazine.

I noticed the request for questions from readers in the last 'Question Box.' There is one question that I would appreciate your answering for me. The question is this: 'Please explain fully the difference between Technocracy and socialism.' I know this may seem like a foolish question to anyone who has studied Technocracy, but this is one of the most frequent questions I run up against when talking to friends about Technocracy. It would be greatly appreciated if you would answer this question in concise terms in one of the forthcoming 'Question Boxes.'

Thanking you for your trouble,

Yours truly,

Henry Elsner, Jr.

Dear Mr. Elsner:

It would take more space than we have available to 'explain fully' the difference between Technocracy and socialism. The best we can do is to outline the major differences and let you carry it on from there. It will readily be seen that Technocracy has borrowed nothing from any school of socialism.

Types of Socialism

Philosophers have been dreaming up solutions to social problems for ages, inspired by humanitarian motives and instinctive yearnings. There are many records of attempts to outline ideal social systems. Some one once said 'socialism is a vast lake of philosophy into which all creeds dip for ideas. According to that definition, there is no end to the possible schools of thought on socialism. Besides primitive tribal communism and various Christian sects on communism, there are several main schools of socialism. Among these are Utopian, Fabian,

Christian, Guild and Marxian Socialism.

Most schools of socialism are either evolutionary or reformist in nature, seeking to correct only the worst abuses of the Price System or to reform it by degrees into some type of ideal commonwealth. Marxian socialism or communism, however, is revolutionary in character. The father of communism is Karl Marx, 1818-1883; its fundamental plan of action is the Communist Manifesto, written in 1848; and its basic textbook 'Das Kapital' was written from 1867 to 1894. In order to set forth the main differences between Communism and Technocracy, it will be necessary to compare the background, the foundation, the method of approach to social problems, and the end results of both communism and Technocracy.

COMMUNISM

Background

The background of communism is an old-world complex of a priori

philosophical and moral concepts about justice, liberty, equality and fraternity. These concepts arose out of the social problems of an older Continent where there is a poverty of natural resources, a backwardness of modern industrial growth and an established pattern of social stratification, together with a clash of diverse class interests handed down from ancient times. The background of communism antedates the industrial revolution. Because of that, the observations and studies of Karl Marx embodied in 'Das Kapital' are heavily weighted with moral and philosophical urges arising only out of a mental vacuum of hopes and ideals. The facts set forth by Karl Marx in 'Das Kapital' are valid only for the Victorian age, because they are based upon a study of the contemporary economic structure of that day and that land.

Foundation

The basis of communism is the materialistic conception of history, and the theory of the class struggle. The essentials of these concepts are that every historical incident can be traced to some economic reason, and that the whole history of mankind can be stated as a struggle between the owning class and the working class. This theory of history is called dialectic (logic of) materialism. This materialistic logic of Marx is offered as a philosophy of every department of social life.

Method of Approach to Social Problems

The plan of action communism proposes is outlined in the Communist Manifesto, and other literature. It is derived from the theory of the class struggle. According to this theory, as industrialization proceeds, the owning class will become smaller in numbers

and the working class correspondingly larger. When the proper imbalance is attained, the workers will revolt and establish the dictatorship of the proletariat. Thus, it is seen that communism's method of solving social problems is by the use of violence and the dictatorship of one group over the whole of society.

End Results of Communism

The end results of communism are proclaimed to be the abolition of classes, private property and the State, and the establishment of equality. The dictum is 'From each according to his ability and to each according to his need.' These stated aims are essentially a priori philosophic concepts. Finally, the end results of communism are international, and intended to be applied to the whole world.

TECHNOCRACY

Background

The background of Technocracy is a survey of the energy, natural resources and industrial capacity of North America, carried on by the Technical Alliance of North America, between 1919 and 1933. This survey established the physical factors which constitute the foundation of Technocracy's program, determine its method of approach, and dictate its end results. The Energy Survey of North America was an exhaustive scientific study of existing facts on this Continent today.

Foundation

The basis of Technocracy is the law of energy determinants and the application of the methods of science to the social order. The theory of energy determinants is new in human thought. It relates the fundamental physical law regarding the flow of

energy upon the earth and its application to social problems. It states that energy is basic in any society producing its physical wealth through the degradation of extraneous energy. The application of science to the social order lays down the credo that all social problems can be solved by scientific and technological methods.

Method of Approach to Social Problems

The method of Technocracy is educational. It is designed to provide Americans with unvarnished facts and scientific study of our common social problems; and to disseminate the design of a new social control to replace the Price System when it must be abandoned. This method of approach is non-political, non-Marxian and non-philosophical. Technocracy is not a pattern of action based upon violence, but a body of thought based upon education.

End Results of Technocracy

The end results of Technocracy is a scientifically organized, non-political social system in North America. This will be based upon a balanced load system of production and distribution, continuous full load operation of all industrial equipment and physical costs of accounting of production and distribution. It is designed for the North American Continent only. Technocracy does not guarantee to abolish classes, nor make people equal, nor even to make them happy. It only guarantees to provide an abundance, leisure and security for all citizens with equal opportunity in life through the operation of an efficient design. This design, as prepared and presented by Technocracy, is the mechanics of area operation under scientific and technological control—The Technate of America.

CONCLUSIONS

The background of communism lies in an economy of scarcity, and its concepts of materialism, the class struggle and the proletariat are valid only for the cultures and the time out of which they arose. The background of Technocracy lies in the most highly industrial Continent on earth and runs concurrently with the social culture of this day, the Power Age.

The foundations of communism are rooted in philosophical and political concepts of a struggle for power. These concepts exist only in the imaginations of those who persist in the economic dictums of the primary stages of the industrial revolution. The foundations of Technocracy arise out of Science and physical laws. It has no theory about the assumption of power, and is not a class movement, but the first social mass movement in history.

The method of communism is revolutionary in nature. Its use of violence, designed for industrially backward nations, would destroy all civilization in a highly industrialized country, where the complex development makes all people dependent on the uninterrupted operation of the industrial plant.

The method of Technocracy is to carry on a campaign of education to inform Americans of the nature of the physical trends undermining the Price System and to prepare against the inevitable breakdown or transition period that must come.

The end results of communism are abstract and vague. There is no such thing as equality, except in a graveyard, and since there is no such thing as equality, there will always be differentiation among individuals in any social system. The abolition of the State equals anarchy or a State where there is no State. This is insane.

The end results of Technocracy are stated thus: 'The paramount concern of the social state is the welfare of the human components involved.' Social classification will be upon the basis of social accomplishment. The Technate will be neither an autocracy, an oligarchy, nor an industrial democracy. It will be governed by principles of Science incorporated in the design which will be an orchestration of man and physical laws for the benefit of man.

SUMMARY

North America is a new Continent, possessed of abundant natural resources. It has more than 1,600,000,000 of installed horsepower, 73 percent of the graduate engineers of the world, the largest body of trained personnel on earth; 19 percent of the world's land area and only 9 percent of the world's population. Here are all the materials necessary for a culture of abundance, leisure and security.

America's social problem arose out of these conditions. A new culture has been developed here, the culture of the Power Age. Its problems are the problems of the Power Age. They are as new and different from the social problems of other lands and times as its culture is. Therefore, the solution must be new and different too. All philosophical and political approaches to social problems, from Plato up to and including Karl Marx, must be avoided. They arose out of foreign cultures and their dictums are foreign to America. To postulate a solution of today's problems on yesterday's facts is proof of arrested mental development.

The complex industrial development of this Continent determines that a communist revolution or a fascist coup de tat would mean the

stoppage or destruction of the equipment upon which all Americans are dependent. This would be fatal to 75 percent of the population. The operation of this complex equipment requires the services of the Scientist and Engineers, no less than that of the untrained, and vice versa. Ninety-eight percent of all power used today in American industry is derived from coal, oil, gas, wind or falling water. The concept that human labor produces all wealth is not valid in America. Physical goods and services are the result of the application of extraneous energy and technological methods in industry. Most of the actual human labor is supervisory, attendant or accessory in nature, and even that is steadily being taken over by automatic mechanisms and the photo-electric cell.

There never was any fixed social stratification in America. Class lines have always been fluid. Consequently, the theory of the class struggle does not fit the picture here. All Americans belong to the same class, as they are all struggling to chisel an existence out of a dying economic order. The theory that the most untrained workers could take over and operate a complex industrial mechanism by some magic called 'industrial democracy' is insane. It ignores all the facts. There is no democracy in production and distribution; there is only design and function. Successful operation of modern equipment requires specialized knowledge and training. Either a thing works or it doesn't. If it works, it is functional, and no democracy is needed. If it does not work, no amount of democracy will cause it to function. The factor which determines the workability of any process is its design. Beliefs and opinions have nothing to do with it.

America's social problem must be solved upon the basis of society as a

whole instead of the theories of any pressure groups. The stupid reactionary and the emotional radical are alike incompetent. Communism is an organized effort by incompetent, emotional radicals to overthrow by force the dying economic order and substitute a 'workers' paradise.' Fascism is the consolidation by stupid reactionaries of all minor rackets into a major monopoly to preserve by force the dying economic order, for as long as possible. 'After me, the flood.'

Did I Say No?

'Do you know that the right to gripe actually belongs only to those who are doing something to maintain all human rights? You realize that Europe was softened up by getting the minorities inside nations scrapping with one another, don't you? You know, too, don't you, that whoever you are, you belong to several minority groups yourself?

'Are you going to get up a little alley-cat gang to "protect" your prejudices, childish fears, and selfish interests?

'Can you tell the difference between a fact and an opinion?

'If the answer to that is no, then you realize, don't you, that your brain is merely a small whirlpool of self-administered mickey fins?'—Philip Wylie, author and columnist, in the *New York Post* (quoted in *Everybody's Digest*, Aug. 1945).

'TO WHOM IT MAY CONCERN:
It is my considered editorial opinion that 75 percent of all published books are worth a maximum of 25 cents each. This is a generous figure.'—Philip Wylie, author of *Generation of Vipers*, in the *Chicago Daily News*, Dec. 6, 1944.

'Free speech does not give any one the right to shout fire in a crowded theatre.' (The late Oliver Wendell Holmes, Justice of the U. S. Supreme Court.)

Today it is possible on the North American Continent to achieve the highest standard of living and civilization ever known on this earth. All the essential necessities are here. It is a physical certainty if we organize to get it.

Technocracy is the social aspect of Science. It calls on all Americans to unite and operate in a culture of abundance; or perish in the shambles of the dying Price System.

Agrotechnology

'A farm with a power demand of 3,500 kw . . . with a connected load of 14,000 hp. in 1,000 motors, was described by B. L. England, Atlantic City Electric Co. (at Nov. 13, 1944 meeting of the Interstate Power Club, New York City). This superfarm in Southern New Jersey contains 30,000 acres, uses power for refrigeration and quick-freezing, for irrigation, for dehydration and for many other operations and consumes around 15,000,000 kw-hrs. (of electricity) annually. This will be more such operations after the war, according to Mr. England.'—*Electrical World*, Nov. 18, 1944.

'If some Office of Production Research & Development projects sound imaginative, you should see the schemes officials have turned down—the proposed study of "mechanical equipment for soilless agriculture" in California.'—S. H. Scheibla, in his article 'America's Amazing Invention Incubator,' in the *Wall St. Journal* 1/26/45 (Italics ours).

'Chrysler used to say more speed for the automobile wasn't a problem; the problem was how to stop them. Our money spenders are in the same position—they can't quit now—that would mean economic suicide. Three hundred billions for War—why not 300 billions for Peace?—From the *Journal of the Ohio State Chiropractic Society*, April-May 1945.

Language of Facts

'There is magic in graphs. The profile of a curve reveals in a flash a whole situation—the life history of an epidemic, a panic or an era of prosperity. The curve informs the mind, awakens the imagination, convinces. Graphs carry the message home. A universal language, graphs convey information directly to the mind. Without complexity there is imaged to the eye a magnitude to be remembered. Words have wings, but graphs interpret. Graphs are pure quantity, stripped of verbal sham, reduced to dimension, vivid, unescapable.

'Graphs are all inclusive. No fact is too slight or too great to plot to a scale suited to the eye. Graphs may record the path of an ion or the orbit of the sun, the rise of a civilization, or the acceleration of a bullet, the climate of a century or the varying pressure of a heart beat, the growth of a business, or the nerve actions of a child.

'The graphic art depicts magnitudes to the eye. It does more. It compels the seeing of relations. We may portray by simple graphic methods whole masses of intricate routine, the organization of an enterprise, or the plan of a campaign. Graphs serve as storm signals for the manager, statesman, engineer; as potent narratives for the actuary, statistic, naturalist; and as forceful engines of research for science, technology and industry. They display results. They disclose new facts and laws. They reveal discoveries as the bud unfolds the flower.

'The graphic language is modern. We are learning its alphabet. That it will develop a lexicon and a literature marvelous for its vividness and the variety of its application is inevitable. Graphs are dynamic, dramatic. They epitomize an epoch, each dot a fact, each slope an event, each curve a history. Wherever there are data to record, inferences to draw, or facts to tell, graphs furnish the unrivalled means whose power we are just beginning to realize and to apply.'

By Henry D. Hubbard, National Bureau of Standards, Washington, D. C.

Some Technocracy Section addresses in Great Lakes area

- 8040-1—204 Columbia Bldg., Pittsburgh, Pa.
- 8040-2—Box 356, Ambridge, Pa.
- 8040-3—340 Brighton Ave., Rochester, Pa.
- 8041-1—1613 East 51st St., Ashtabula, Ohio.
- 8141-3—39 E. Market St., Akron, Ohio.
- 8141-4—2237 Front St., Cuyahoga Falls, Ohio.
- 8141-7—P. O. Box 270, Barberton, O.
- 8141-14—P. O. Box 553, Kent, Ohio.
- 8141-15—10537 St. Clair Ave., Cleveland 8, Ohio.
- 8240-1—207 N. Washington St., Galion, Ohio.
- R. D. 8242—c/o Arthur C. Clayton, Marine City, R. No. 1, Mich.
- R. D. 8242—c/o John Reynolds, St. Clair, R. No. 2, Mich.
- 8341-1—1430 Adams St., Toledo 2, Ohio.
- 8342-1—9108 Woodward Ave., Detroit 2, Mich.
- 8342-2—708 Garland St., Flint 4, Mich.
- 8342-2—55 Niagara, Pontiac, Mich.
- 8439-1—P. O. Box 81, Station A, Dayton, Ohio.
- 8741-1—3178 N. Clark St., Chicago 14, Ill.
- 8743-1—2204 W. Vliet St., Milwaukee 5, Wis.
- 8844-1—217½ Pine St., Green Bay, Wis.
- 8844-2—1011 W. College Ave., Appleton, Wis.
- 8844-3—135 Van St., Neenah, Wis.
- 9038-1—4518 Delmar Blvd., St. Louis, Mo.
- R. D. 9041—2428 13th Ave., Rock Island, Ill.
- R. D. 9140—18 N. 5th St., Keokuk, Iowa.
- 9344-1—28 N. 8th St., Minneapolis 3, Minn.
- R. D. 9344—527 Wabasha St., St. Paul 2, Minn.
- 9439-1—817 Walnut St., Kansas City, Mo.
- 9648-1—P. O. Box 178, Warren, Minn.
- R. D. 9737—4442 Bayley, Wichita 9, Kan.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

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WHO?

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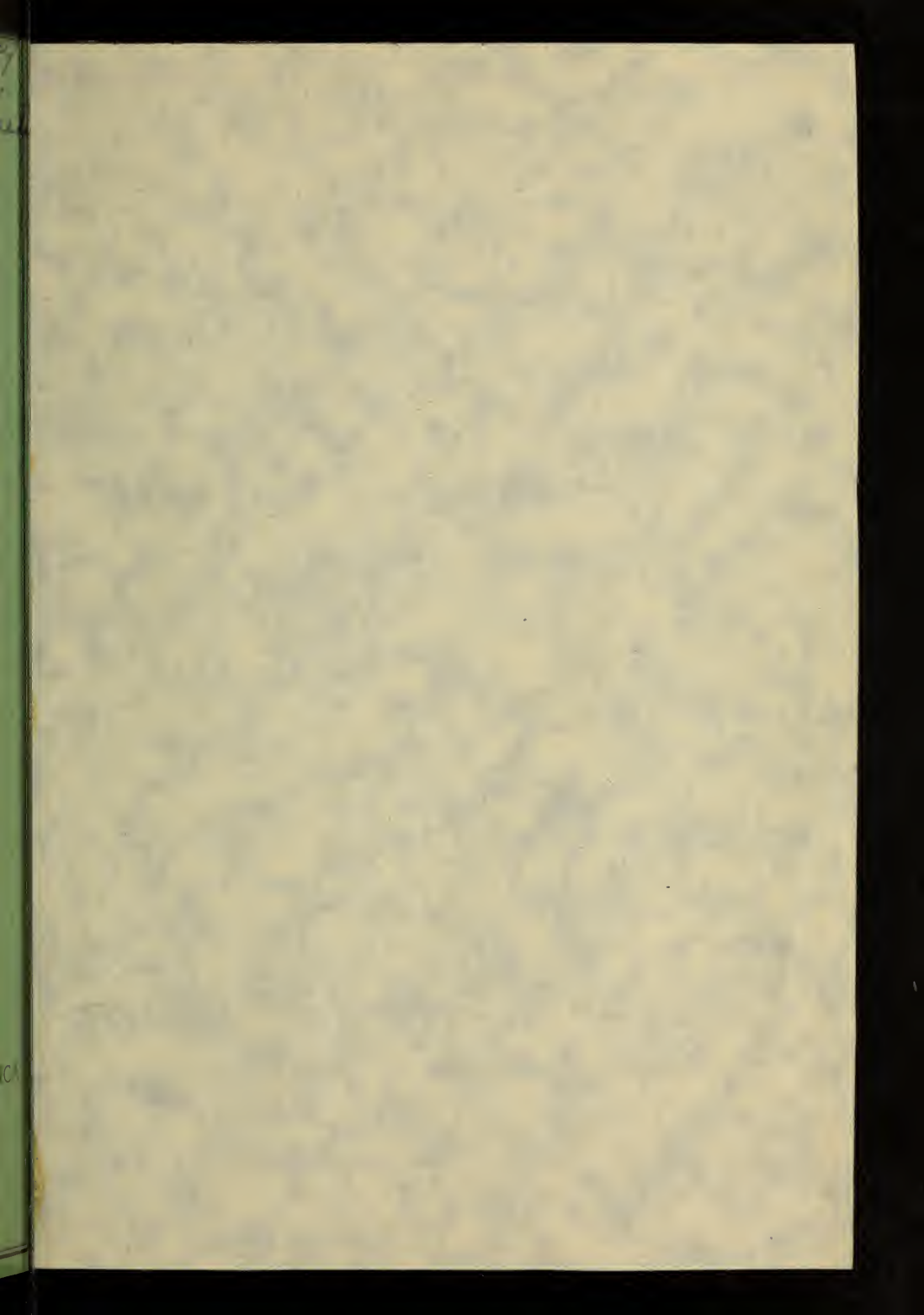
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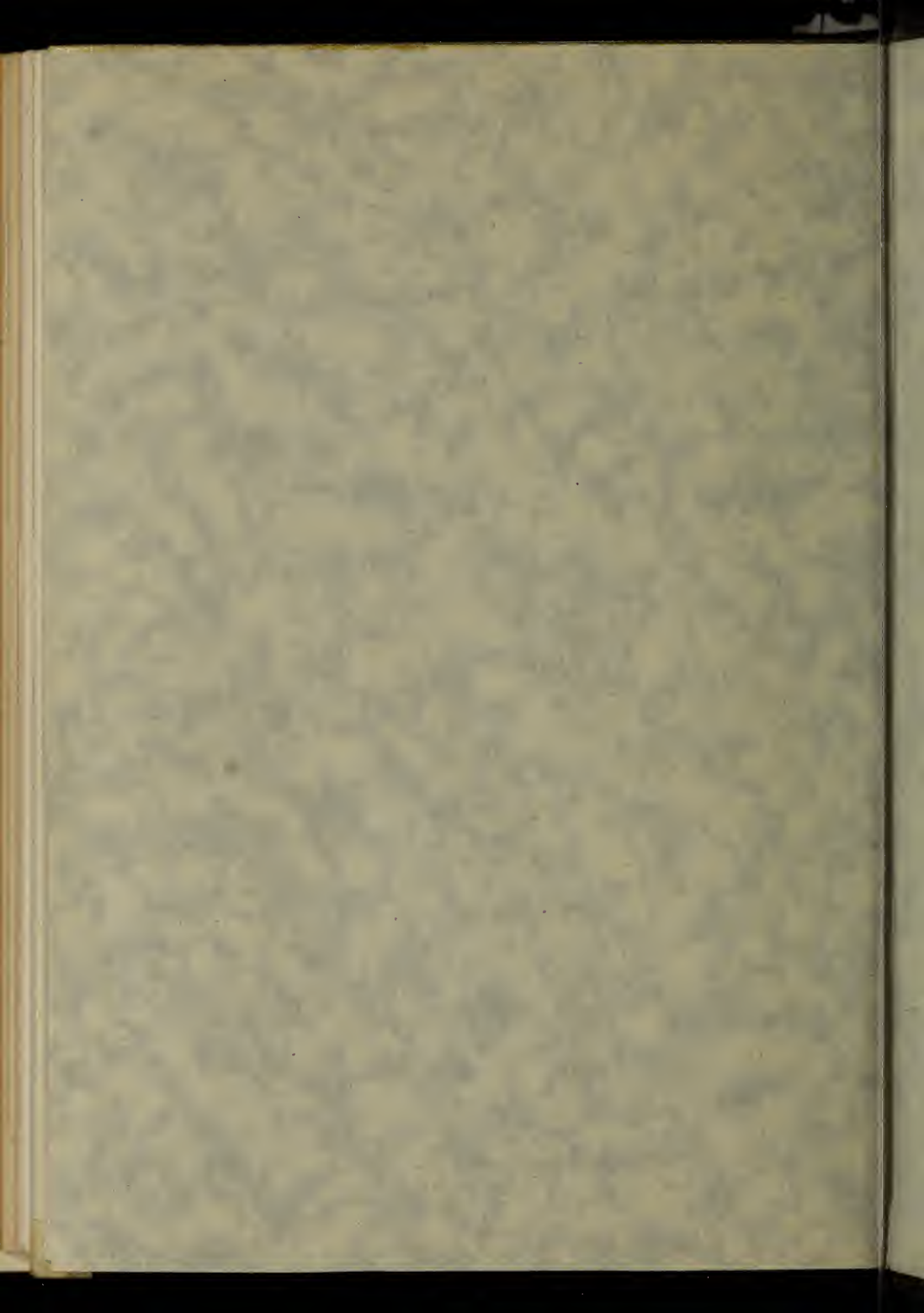
Think North American!

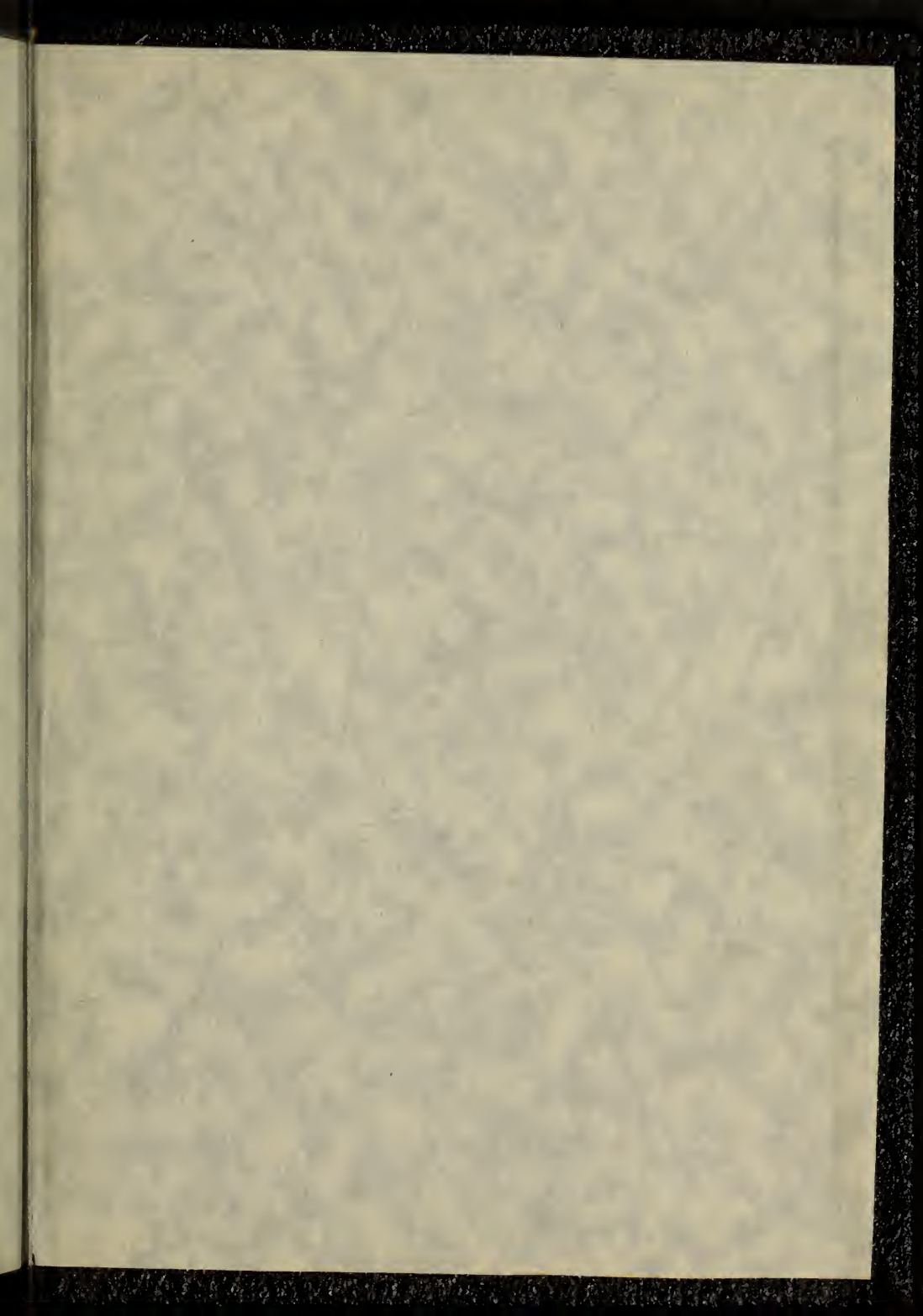
Think:

- Not 'Produce for Profit,' but *Produce For Function*
- Not 'Sell To The Market,' but *Distribute To Consume*
- Not 'Financial Resources,' but *Natural Resources*
- Not 'Debits and Credits,' but *Physical Cost of Accounting*
- Not 'Medium of Exchange,' but *Medium of Distribution*
- Not 'Booms and Depressions,' but *Balanced Load Operations*
- Not 'Business Methods,' but *The Scientific Method*
- Not 'More Postwar Promises,' but *More Goods and Services*
- Not 'Political Machinery,' but *Functional Sequences*
- Not 'Decision By Opinions,' but *Decision By Facts*
- Not 'Dictatorship of the Proletariat,' but *Dictums of Technology*
- Not 'Class Warfare,' but *Mass Social Action*
- Not 'Equality of Birth,' but *Equality of Opportunity*
- Not 'The Nobility of Labor,' but *Energy and Technology*
- Not 'The Right to Work,' but *The Opportunity to Consume*
- Not 'Security in Old Age,' but *Security from Birth to Death*
- Not 'Pie in the Sky When You Die,' but *Abundance Now*
- Not 'Private Right and Privileges,' but *The General Welfare*
- Not 'Free Enterprise,' but *Free Technology*
- Not 'Sovereign States,' but *Mechanics of Area Operations*
- Not 'Geopolitics,' but *Geotechnics*
- Not 'Back to Normalcy,' but **FORWARD to the NEW AMERICA**
- Not 'Chiselocracy,' but *Technocracy*

Think North American!





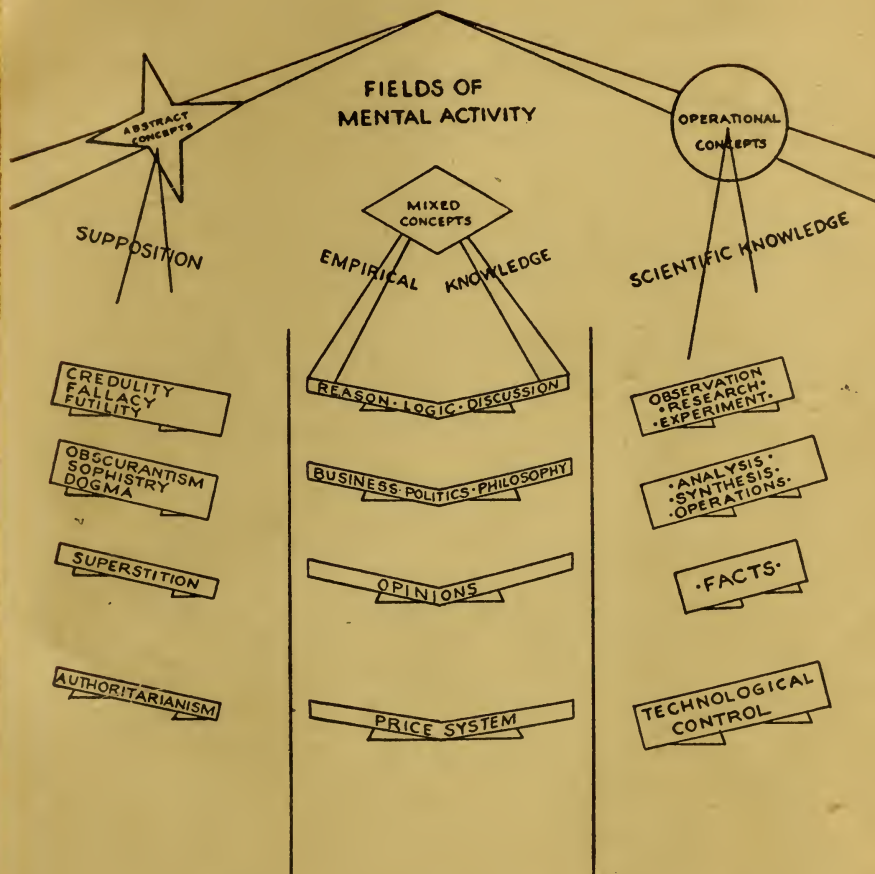


1946-47

TECHNOCRACY, INC.

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EDMONTON

marked



A concept is an idea. Nearly all concepts fall broadly into three groups. Abstract Concepts have no physical properties in their makeup. They come and go, amorously, in that fictitious realm of the imagination. Operational Concepts have physical content. They are derived from things and events in our physical environment. One may perform experiments to show their reality. Mixed Concepts are a hash of abstract and operational ideas.

Abstract Concepts beget a body of apriori assumptions which may be defined as Supposition. Since Knowledge implies acquaintance with facts the ideology of Supposition is not Knowledge. It is an imaginary nothing. Mixed Concepts beget a compound of these imaginary nothings and some acquaintance with fact. This adulterated hash may be called Empirical Knowledge. Operational Concepts beget Scientific Knowledge. This is true Knowledge.

Supposition spawns a litter of maleficent frauds. Some are shown on the chart. The past was very rich in this moonshine. Empirical Knowledge breeds a profusion of counterfeit glitter. That is the Price System today. Scientific Knowledge parades forward with an army of facts. The future belongs to it.

The point of this is that in any projected solution of the American social dilemma today every attempted application of Abstract or Mixed Concepts must result in, first, futility, then a new Dark Age of political-industrial-clerical Authoritarianism. We must apply Operational Concepts to the American problem. It is our only hope. Anything else is Continental Treason.

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

★ Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermilion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Victory Program with any interested people and Confidential Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

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Technothoughts

By Sam Pavlovic, R. D. 9344

A Technocrat observes technocritically, and then talks technocratically.

* * *

Those well-meaning folks who tell you to hitch your wagon to a star oft forget that in a Price System most of us can't afford a wagon.

* * *

Many who pursue the Golden Fleece of the Price System end up getting fleeced.

* * *

The only chiseling that Technocracy advocates is that on the conditioned concrete of conventional craniums.

* * *

Progressive thought often starts in the region of the stomach.

* * *

Short-circuit thinkers: Just can't get past their wallets.

* * *

Products of North American technology are the best under the sun. TECHNOCRACY is the number one product of this technology.

* * *

Technophobes: Those proponents of preferred personal position in the paper mache panorama of Price pandemonium.

* * *

Technophiles: Just us who realize we can't get that square deal inside the circles of the Price System.

* * *

Drama Review: 'All that we can say for the current run of the North American scene is that this stencheroo is housed in the beautiful and adequate Continental Theatre. The theme is corny, the costumes and stage settings lousy, and the direction stinks. The actors, strangely enough, appear capable if they ever give themselves a chance.'

shaking in your boots and running around in circles. Some one will get suspicious. They say knowledge eliminates fear, and are you not one of the Smart Guys? But, did you ever stop to think what kind of smartness you are so smart at? Maybe you've been backing the wrong horse. Could be!

Down with the OPA. No, we must continue it. We'll continue it but in modified form. Make the loan to England. (This will help us to maintain scarcity.) No, England must solve her problems some day; so why not now? Oh, well, let them have it, but let it be known that this is the last time. We must draft labor. No, that would be too obviously a Fascist measure. Well, let them know that if they don't quit striking, we MIGHT draft them. Tell Russia where to get off. No, let's compromise. Full employment, 60 million jobs. No, we would have to pay high wages if labor didn't compete for jobs. Well, we must not allow too much unemployment, or they will get out of hand.

'—Or Get Off The Pot'

What the hell's the matter with you smart guys, have you gone mad? Can you not agree on anything? All of you can't be correct, but all of you could be incorrect. Surely this is not true, for are you not the smart guys who helped Americans when they were hungry by destroying food before the war? Are you not the upholders of

Democracy and the American way, who gave up so much (for a price) to defend it during the war?

You may be a smart guy, Mr. Smart, but you don't have guts. You are afraid. You tell glowing stories as to the value of truth, but you do not have the nerve to tell the truth. Some of you even know how this mess could be straightened out, but you lack the courage to tell it above a whisper. You are stupid in some ways, Mr. Smart. Do you think you can get out of this mess by retiring to your little retreat in the mountains or on a little farm some place? Do you actually imagine that the rest of us will starve to preserve your racket?

You know that abundance invalidates price. You couldn't help but know it when you go to so much trouble to maintain scarcity. The only 'out' for you, brother, is to admit it, and do all you can to help install a technological system that can distribute abundance without price. We are all in this little boat together and if it sinks, pal, you are going down with the rest of us.

If you are so smart, why have you not solved the problems facing us, instead of trying to keep us from knowing that there is a problem? You have had plenty of time to do it. You have been running this country for a long time with your big corporations and your political stooges. Now your last chance is coming up, but fast. Solve it or move over, Bub, because if you don't or can't, then science will.

The invention of a glass bottle blowing machine increased output per worker in the industry 4,000 percent, says a Twentieth Century Fund study.

NOTICE: Due to Price System interference the regular department 'From Here On Out' turned up missing for this issue. Better luck next time.

Dictionary of the Price System

A Word A Day Keeps The Fog Away

By Herb Robbins, 8439-1, A. E. Borel, MAL, and Joseph Eble, R.D. 11934

SMALL BUSINESS MAN—A licensed tax collector for the politicians, operating on a percentage basis.

ONE WORLD—Last ditch hope of Free Enterprise. Will soon collide with the laws of thermodynamics.

FOREIGN TRADE—Selling goods overseas so as to acquire purchasing power at home in order to buy goods we already possessed before we shipped them overseas.

ORGANIZED CHARITY—Dividing up the crumbs that fall from the table of free enterprise.

MALNUTRITION—The deplorable condition deplored by the deplorably over-fed. More easily rolled over the tongue after a ten-course dinner.

STATES RIGHTS—Dividing up the political gravy. You work your side of the street; I'll work mine.

CHAMBER OF COMMERCE—A chamber is a pot. Commerce stinks. Draw your own conclusion.

GOOD BREEDING—'Concealing how much we think of ourselves and how little we think of the other person.' (Mark Twain)

ADVERTISING—The shill that drags in the suckers. Smokescreen of free enterprise.

THE AMERICAN WAY—'A system by which no matter what party is in office the average citizen will remain just as poor as ever.' (Sydney Harris in *Chicago Daily News*, October 1, 1946.)

CHISELPUSS—A specialist in separating the sucker from his debt tokens.

FARM SUBSIDIES—(before the war) Paying taxes to pay farmers to create artificial scarcities of farm products. (Now)—Paying taxes to pay farmers a bonus so they won't reduce production.

INCENTIVE—The cash urge for free enterprise to fight a war. If it's cut to \$25,000 a year, they quit.

SALESMANSHIP—Rationalization of a raw deal.

PATIENCE—Sweating out a political promise.

WILL OF THE PEOPLE—'The result of an election in which not more than 40 percent of the voters go to the polls to elect a candidate they had no voice in choosing after a campaign of insults, innuendoes and outright lies.' (Sydney Harris in *Chicago Daily News*, October 1, 1946.)

LABOR—'One of the processes by which A acquires property for B. (Ambrose Bierce)

America - The Beautiful

Sixty-nine percent of the population of Alabama live on farms and they receive an average annual income of \$335. The average annual income of 96.3 percent of these farm people is \$278. The other 3.7 percent receive \$1,794 a year each. The average public school expenditure in the nation as a whole is \$103.49 per pupil, per year. In Alabama it is

\$41.97. In non-poll tax states in 1944, 61.9 percent of the adult citizens voted. In Alabama 19 percent voted. In Alabama 57 percent of the dwelling units have no inside toilet; 66 percent have no running water; and 75 percent have no bathtubs or showers. (From *Mobile, Alabama, Labor Journal*, as quoted by the *International Teamster*, May, 1946.)

My Subject Is Technology

By Dr. G. W. Gleeson

This is the last talk of a lecture series given by the author over Station KOIN, Portland, Oregon. It was broadcast on July 28, 1946. Dr. Gleeson is Dean of the School of Engineering and Industrial Arts at Oregon State College, Corvallis, Oregon.

FIFTEEN minutes is such a short time, and there is so much to say in a last lecture. This is particularly true in discussing technology, and detail must be disregarded in favor of broad outlines. Nevertheless, technological developments are sufficiently significant to be a fitting topic for any final discussion, since the fate of civilization is intimately linked with technical achievement. There are but two patterns of civilization, the passive-philosophical and the active-technical. We have chosen the latter as the American Way of Life. Others have done likewise. The choice is historical, but where does it lead?

In speaking of technology, I lump pure and applied science together. Because the Greeks in their philosophy counted intellect above senses and thought above experience is no reason for us to carry fine distinctions between basic, fundamental, or pure science and applied science, or engineering, down through the ages. Today, theory and practice are merged. In modern development three large trends are evident. The first, or technological pattern, is characterized by rigid adherence to disciplines, rapid and universal acceptance of change and is international in operation. Out of revolution in thought, science was born. Independently, inventions were created to merge ultimately with science and be a product thereof. Engineering came into being to put science and invention to work. Essen-

tially, the technological pattern was wealth-creating, and operative through the efforts of the scientist, inventor and engineer as supported by industrial capital. Of importance is recognition of the fact that the technological pattern developed upon a self-accelerating basis, and the efforts of all men were available to all others. More of this later.

The second large pattern which initially paralleled the technological might be termed the political-economic. No farther back than the theory or doctrine of laissez-faire, the rise of economic individualism, are embodied the essential principles. The acquisitive instinct of man was satisfied by freedom of independent commercial enterprise. *Our liberties and democracy are extensions of economic individualism into government and politics.* (Italics ours) Current extension of the pattern is evident in our continued discussions of 'free enterprise,' 'small business,' monopolies, and individual rights.

The first two patterns, the technological and the political-economic, each a powerful organizational scheme in itself, ran parallel for a time and ultimately merged into a single force out of which was born our modern industrial economy. The merged pattern has gathered momentum for over a century, and complexities have multiplied and maladjustments are only too evident. All elements of the pattern have not gained equal strength

Dictionary of the Price System

A Word a Day Keeps the Fog Away

By A. A. Munnich, R.D. 19 E-47 N;
Geo. B. Connor, MAL and others

AUTOCRACY—A social system in which the rulers do as they please and the people have no say in the matter.
DEMOCRACY—A social system in which the people can have their say but the rulers do as they please anyway.

ELECTION—Choosing between two lemons to decide which one is the sweetest.

DOLLAR—A piece of paper that says the Treasury will pay the bearer one dollar on demand. If the bearer demands his dollar he gets another piece of paper exactly like the first.

ADVERTISING—A device whereby the chiseler gets what he wants by making the sucker believe that he wants what he gets.

CULTURE—Knowing a bit more than nothing about a bit less than everything.

ACCIDENT and CATASTROPHE—Many people get these terms mixed. That's bad. Suppose a giant airliner full of politicians and free enterprisers were to crash that would be an accident. However, if any of them were to survive, that would be a catastrophe.

DEBATE—Tennis ball conversation. It does lots of travelling but never gets anywhere.

LIBERAL—An economic canine that is all bark and no bite.

SENIORITY—An effective method for installing incompetents in positions of authority and responsibility.

BANKER—'A fellow who lends you his umbrella when the Sun is shining,

but wants it back the minute it begins to rain.' (Mark Twain)

PHILOSOPHY—'A study that enables a man to be unhappy more intelligently.' (Groucho Marx in the *American Freeman*, January 1947)

FULL EMPLOYMENT—That level of employment which will not 'provoke an inconvenient restlessness among the electorate.' (Professor A. G. B. Fisher of the Royal Institute of International Affairs (London) in his book *International Implications of Full Employment*, as quoted by *Business Week*, February 22, 1947)

VOTING—The citizen's choice of which fist he'd rather be hit with. Either way, he takes it on the chin.

RUGGED INDIVIDUALIST—The guy who howls the loudest when subjected to the same practices he applies to others.

For the benefit of new readers, this Department was started by a reader of Great Lakes Technocrat. The first installment appeared in the Sept.-Oct. 1946 issue. All the quotations, except for a few taken from the general field of literature, are written by readers of this magazine. As a reward (not pay) for his social surgery on the phony concepts of the Price System, each contributor of one or more acceptable definitions, is sent five free copies of the issue in which his definition appears.

So, get busy, readers. Look around you, and observe the dog-eat-dog operations of the Price System. Then put on your thinking cap and cerebrate a few hot definitions. The idea is to redefine words, phrases, slogans from the viewpoint of social change. Put a new twist on the hoary sayings and platitudes. Definitions should be short, pithy and biting. Load them with ridicule, irony and veracity. Take a crack at the crazy Price System. It's more fun than playing footie with a movie queen!

against the erroneous idea occasionally advanced in certain Catholic (Roman) circles regarding the illegality of insurrection and the use of force.

Cardinal Goma of the Catholic (Roman) Church in the Spanish fascist paper *Accion Espanola* (as quoted by *The Protestant*, May 1946.)

VOICE OF TECHNOLOGY

All In The Same Boat

The next big bust will be everybody's bust. It will be everybody's war, everybody's peace, and it will be everybody's depression.

Edward J. Condon, assistant to the president of Sears, Roebuck and Company, in a speech before the Council of State Governments at the Edgewater Beach Hotel, Chicago, January 8, 1947. (As quoted by the *Chicago Sun*, January 9, 1947.)

Fair Exchange a la Price System

In every two-house Legislature if we post the checks and balances at the end of the session, we shall find that the politicians have the checks and the special interests have the balances.

The late George W. Norris, unorthodox U. S. Senator from Nebraska, while campaigning for a unicameral legislature in Nebraska in 1934. (As quoted by the *New York Times*, January 26, 1947.)

Cat Gets Out of Bag

In 1902 the electric generating capacity of the country was 1,212,000 kilowatts, the industry had 30,000 employees and its output was 2,500,000,000 kilowatt hrs.

In 1946 the capacity was in excess of 50,000,000 kilowatts, there were more than 246,000 employees and the output was above 233,000,000,000 kilowatt hours. *It is significant that the capacity increased 41 times, the output 89 times and the employees only eight times.*

(Italics ours)

Charles Y. Freeman, chairman of the

Commonwealth Edison Company, in a speech before 15 engineering, electrical and related societies and institutions at the Palmer House, Chicago, on the Centennial observance of the birthday of Thomas A. Edison. (As quoted in the *Chicago Sun*, February 11, 1947.)

'Pigs Is Pigs'

I say let religion be taught in the homes and the churches, but at the expense of those believing in the creed being taught. Keep it out of the public school.

I say further to let the churches use the public schools means the beginning of the end of many churches. Except for the Catholic (Roman) Church, there is not a single one that could ever hope for any practical benefit in the end, because when you let the churches use the public schools you are beginning to let the churches feed out of the public trough, politically speaking.

And like pigs in a trough the big ones are going to crowd the little ones out.

Finally, there will be only one left; and then we shall start back to the Dark Ages, with the union of Church and State.

Landon Chapman, attorney for Mrs. Vashti McCollum, in his final argument before the Circuit Court of Illinois, at Urbana, in Mrs. McCollum's suit against the Champaign, Illinois, School Board to stop religious courses in the Champaign schools. (As reported and quoted in *The Chicago Daily News*, September 14, 1945.)

Dictionary of the Price System

A Word A Day Keeps The Fog Away

By Herb Robbins, 8439-1 and Joseph Eble, R.D. 11934

Well, here we are with installment No. 2 of the Dictionary. This department is entirely a product of the readers of GLT. They thought up the idea and it's up to them to carry it on. Everybody is invited to participate. This is probably the first time in literary history that the readers of a magazine have had a chance to write the very stuff they read. Perhaps YOU think that you could improve on the definitions given below. Well, just have at it. The field is wide open. Think of all the words and phrases in the dictionary. Think of all the pat sayings that bolster up the Price System. Let's knock some of them over. It's more fun than playing footy.

The idea is to redefine words, phrases, slogans, etc. from the viewpoint of social change. Put a new twist on these hoary definitions that will crack down on the Status Quo with the triple lash of ridicule, irony and veracity. Consult the writings of Will Rogers, H. L. Mencken and Ambrose Bierce for pointers. Definitions should be short, pithy and biting. Each contributor of acceptable definitions will get five free copies of the issue in which his contribution appears, as a reward for his social surgery on the phony concepts of the Price System. So, get busy, Readers, and shoot in your definitions. Don't let George beat you to it.

MONEY—The common denominator of all socially detrimental habits and behavior. Created by a promise, manifested by a token, and as intangible as the promise it represents.

CITY—Any collection of chisellers surrounded by a large body of suckers, the death trap of concentrated futilities and possibly the death-trap of millions of Americans, who have yet to realize that energy, not business, makes the old mare go.

MOUSE - TRAP—A Contraption which, if built better than its predecessors, will probably end up in the Buried Patents Dept.

MAN—Jokingly called 'Homo Sapiens'; more correctly called 'Homo, the Sap.' A superior animal, in the sense that he builds facilities to produce an abundance of useful things. Inferior, in the sense that he refuses to enjoy his own handiwork because it's 'Taboo.'

INCENTIVE—A 'red herring,' dragged across the path of Technology's decree that here in America men can no longer live by a gradation of 'income,' based on 'earning capacity.'

This little beaut is invariably spewed forth by those who still think in terms of the ethical division of a scarcity.

HAMBURGER SANDWICH—Two gigantic pressure groups of Americans, with Congress in the middle. A little more pressure from technology, and Congress pops out like a meatball. Then the two groups are slammed together, whereupon they Unite and Operate, or Join their Ancestors.

EFFICIENCY—A measure of the ratio of the degree of application of knowledge to its stage of development. Easily sabotaged by 'owners' with a 'dog in the manger' complex, and by workers who still regard Technology as a menace to their 'security.'

GRABOCRACY—The 'ocracy' that has put America into its present mess. The Grabocrats have grabbed about all the money-making devices to date. They install this man-displacing machinery and thus will soon have no customers for their goods. Poor old Price System, what then?

EDUCATION—The inculcation of the incomprehensible into the 'minds' of the ignorant by the incompetent.

What Hen-Pecking Means to You

Reprinted from the *Farm Journal*, September, 1946

By Vernon Vine

A Flock of chickens is not a nation of people, or vice versa. Nevertheless, there is a similarity in their behavior. Chickens have a system of priority based upon the biologic fact of functional ability. There is also a natural system of functional priority inherent in the biologic makeup of people. What are called 'peck rights' and 'pecking' are the visible operations of this underlying order.

In the world of chickens this system of peck rights operates rather freely. In the world of people, it is constantly being interfered with. Under the politics, business, philosophy and nepotism of the Price System, this natural order of functional priority among people gets all 'balled up.' It becomes inverted to a great degree. The result is social confusion, malfunctioning and unnecessary competition all down the line. The 'peck rights' are in the wrong place. That's the Price System for you.

To some people a chicken may be only a dumb bird that gets up too early; goes to bed too soon; lays eggs for a living, and as a reward, gets invited to Sunday dinner just once.

But to Dr. A. M. Guhl of Kansas State College, chickens are creatures with emotions, the beginnings of a language, and a distressing tendency to behave quite a bit like human beings.

Dr. Guhl has spent 7,000 hours just watching chickens behave. He probably knows more about why they act as they do than any man in the U. S.

He's learned all kinds of things about chickens—things that may help you as a poultryman, and things that may help explain why you and I act like human beings, too.

Chickens, for example, have a system of seniority that makes the rules of the U.S. Senate look like something drawn up to regulate the game of hop-scotch.

In a flock of chickens—up to 30 in number, at least—you can rate the hens right down the line from 1 to 30, by one rule—who pecks whom. Dr. Guhl calls this the 'social order,' or, more simply, the 'peck order.' Hen

No. 1 pecks every other hen in the flock, and none dares peck her back. Hen No. 2 pecks the next 28, and gets pecked only by No. 1.

At the bottom of the list is poor, forlorn little No. 30. Every hen in the flock pecks her, and she dares not peck a single one in return. If she wants enough to eat, she has to get up early, and stay up late. Most of the day she wanders wistfully around the edges of the flock, moving along whenever any of her sisters head her way. In winter she gets the draftiest perch; in summer, the warmest spot. Because she doesn't get enough to eat, she's a poor layer. She's an easy mark for any disease bug.

In a flock larger than 30 these rules don't work so strictly, because there's a limit on how many acquaintances a chicken can recognize.

In a small flock a hen knows which birds she needs to steer clear of. In a larger flock she isn't so sure, and there's nothing quite so upsetting to a chicken as not knowing whom she can peck, and who's going to peck her.

So instead of keeping her beak in the mash hopper a good share of the time, she stands around looking over her shoulder to see who's going to

Dictionary of the Price System

A Word A Day Keeps the Fog Away

By H. V. Wilkie, 8342-1

You, Too, Can Be Famous

CURRENT literature bristles with ads for an endless variety of self improvement courses, all at so much down and so much per week or per month, as the case may be. 'Learn Spanish,' 'Improve Your English,' 'Boogie Woogie in Six Easy Lessons,' 'French Made Easy,' 'Learn to Read,' 'To Write and Speak' 'To play the Zither,' 'To Rhumba and Blacken your baby's bottom,' 'Learn Law, Radio, Knitting, Sewing, Acting' and on and on and on.

The inference might be that our fast dwindling public and rapidly growing parochial school systems have left much to be desired in the way of equipping their output with satisfactory intellectual tools for chiseling out a comfortable spot in our Price System social pattern.

Any one indulging in such an inference would find Technocracy not only marching shoulder to shoulder in agreement but marching out a step ahead, with the suggestion that mal-education, far from being a matter of neglect or incapacity, is much more probably a carefully planned expression of deliberate intent. 'Ignorance is fair game for wit' and where will our sharp-witted big shots find ignorance to exploit if our schools do not supply it.

The method is graphically illustrated in the reports of the labors of occupational forces coming in from Germany, Japan, and, to a small extent, Italy. It seems that the former big shots in those countries had seen to it that all the text books used in

the schools were loaded with dogma, propaganda, religious, racial and national doctrines, designed to make the masses easy pickings for the boys 'in the know.' In Italy, the Fascist flavor of the text books appears to suit our present taste; but in Germany and Japan we are busy with a wholesale job of remodeling to make them suitable carriers of propaganda for the 'Democratic method' (of painless extraction).

If the output there equals or approaches the home product, these places should soon be rich territory for the Self-improvement and Pull-yourself-up-by-your-bootstraps operators. Technocracy, being ever alert to endorse and wherever possible to use the best technology, hastens to seize the opportunity herewith presented to perform two highly functional services with one and the same piece of energy exertion.

Troy Fell For A Horse

One of these services has to do with a major task which will confront our uplifters on foreign soil. We refer to the necessity of rewriting the dictionaries to supply them with word definitions more in conformity with the educational pattern being installed. There is the best assurance that this will result in a great mass of semantic blanks, i.e., definitions having no reality in a world of things and events, and no operational referent. Therefore, we have prepared a selected small group of words covering a wide field. These will supply our hard pressed dictionary writers

with a few definitions of things as they really are. After all, everybody likes a little change once in a while. Maybe they will slip a few of these in the proper places so that here and there the fog of Price System propaganda may be punctured.

The other bird we can bag with one stone has to do with the fact that at the self same time we can present for the readers of Technocratic literature a priceless bit of self-help; at least, it's free. By this we mean if our readers will follow the tactics of the usual self improvement course, they can start in today to build up their factual I. Q. Simply cut out the list of words and definitions appearing below, and put them in your hat. Once a day take off your hat and memorize one word and definition each day. We have included a month's supply, with a few spares in case some days you get red hot and want to play a daily double. In case you do not have, or do not wear a hat, a vest pocket will do, and if no vest (which we would scantily expect in the gentler sex), well, we know your thirst for betterment will surmount any and all obstacles.

In preparing this list we have not used the customary pattern of alphabetical arrangement but have followed the more subtle 'here and there' design, which we know you will find much more inspiring.

Symbols of Things and Events

HISTORY—A highly romantic account of the maneuvers for power by smart operators.

NATION—A group of business operators who have established control over hazily defined land areas. This control is maintained through a carefully nurtured batch of notions about

language habits, folkways, traditions, religious preferences, hatred, etc. When we say England demands, or France wants, or Argentine will or won't, we really mean vested economic powers in England, France or Argentina demand such or such through their political mouthpieces. There are cases, of course, where both the political and economic power are vested in the same hands, and in places all three of the dominant controlling devices, political, clerical and financial, are centered in one head.

PEOPLE—A necessary commodity in a nation, otherwise there would be nothing to exploit. In industry, a commodity is called 'labor.' In war—bullet stoppers, called 'the rank and file.'

WAR—An old business custom carried on by business men for business purposes. Example: Boer War—the Rhodes' interests fight for economic control of South Africa.

AMERICAN REVOLUTION — Revolt by colonial land barons and merchants against cutting in the profligate dudes and dandies of London on the rackets they had established over here. The Declaration of Independence was signed by the richest men in the country, who, right away, became busy with affairs of State, while farmers, fishermen, clerks and trappers did the fighting.

WORLD WAR I—International Munitions Cartels drumming up business in a big way.

AMERICAN CIVIL WAR — Battle over the price of cotton and tobacco. The rich Southern Planters revolted against political and economic control by Northern Mill owners and merchants. The last thing the Northern boys wanted was high-priced cotton, which might result from free labor,

so they threatened to impeach Lincoln when he slipped over the Emancipation Proclamation while they were not looking. Lincoln was the only major political figure who defied his bosses, and look what they did to him.

INDUSTRY — The application of technology to the production of goods and services.

BUSINESS — The exploitation of industry for a profit.

CONSCIENCE — The squashy feeling that comes the first few times a person tries to commit an act against which the common folkways have inhibited him.

MORALS — A set of inhibitions (mostly socially desirable) based largely on folkways and tribal notional taboos.

CRIMINAL — A person with predatory ideas but without enough capital to start a corporation.

CONVICT — The little one that didn't get away.

CORPORATION — A device for levying tribute by remote control.

VICE — Any profitable undertaking based on human weakness; a subject for prolific conversation, but no action.

One Word Leads To Another

JUSTICE — That which smart people pay public servants liberally for, and which dumb people fight valiantly for in the courts, and seldom get.

CONGRESS — The trademark name of a playing card manufacturer, a hazy institution somewhere that is supposed to do something but never does.

REPRESENTATIVE — (Political) — A person who has reduced to a

fine art the business of passing out just the right amount of patronage to the right people so as to remain indefinitely on the public pay roll, otherwise he ceases to be a representative.

SENATOR — From 'Sen Sen' a breath lozenge and 'Tor' the bull; Breath and Bull — well, draw your own conclusions.

ANALYSIS — A factual peek at things to find out how they are put together or what makes them tick.

SYNTHESIS — The act of using the results of analysis to put the correct ingredients together to form the means of reaching a desired objective.

DEMOCRACY — From the Greek 'demos, the people' and 'cracy, to rule'. What people rule what? It's still Greek.

EQUALITARIAN — A dirty word which implies that there might be some other alternative to the Price System besides totalitarianism. You must never use this word for if it ever broke out into general usage, it might ruin every racket we have spent centuries building up.

'FREE ENTERPRISE' — From Free — Enter and Price. Means freedom to enter your pocketbook and extract the desired price!

PRIVATE ENTERPRISE — The concept of a Chiseler's Paradise, where everyone can hi-jack an individual or the whole of society without regard for anyone but himself. America's economy today is the apogee of private enterprise. That's why it's in the mess it is in now.

FASCISM (American) — The last ditch hope of die-hard private enterprisers for just one more crack at homo sapiens with accent on the 'sap.'

FREEDOM—The right of the wolf to be free to prey on the sheep; also the right of the sheep to be free from the wolf. You figure it out.

TECHNOLOGY—The application of science to the industrial arts and crafts.

TECHNOCRACY—The application of science to the problem of social integration in a hi-energy industrial environment of physical abundance.

CHURCHIANITY—The highly organized business of cashing in on man's fundamental urge to know what life is all about. It deals largely with sheep and shepherds, and its practical application has to do with shorn lambs.

NEWSPAPER—A method of distributing advertising sugar coated with spicy reading matter designed to cause intellectual atrophy.

MAGAZINE—Ditto, with color effects.

RADIO—Ditto, with sound effects.

CHISELER—Any American who can or who hopes he can obtain a differential over his neighbor through adroitness in Price System manipulation.

SUCKER—A would-be chiseler, with a blown fuse.

An Apple For The Student

Let us assume that this is now one month later and you have mastered the above list. What is the result? You will probably gag every time some smart boy tries to sell you a load of Price System baloney on the Radio

or in the Newspaper or from the Platform. Suppose you mastered a similar list the next thirty days and so on for a year, for two years? But what's the use? It wouldn't take more than one more such list (if any) to sharpen you up, so that you would get the hang of it, and do it yourself. Thus, when you hear such words as 'honor,' 'legality,' 'value,' 'law,' 'American Way,' etc., you will at once scrape off the psychological overburden and see the bill of goods you are supposed to bite on. Experience shows that at this point, you, too, will just naturally have gravitated to that nearest focal point of factual information, your nearest Technocracy Section or Study Class.

You, too, will learn how America is put together and what makes it tick!

You, too, will know the trends that are shaping America's destiny! You, too, will know what to do about the abundance and security that America is trying to throw into your lap!

You, too, will be a Technocrat—a person for whom life has a meaning and who can, after the manner of all typical American fauna, brace your shoulders and face forward, stride firmly and without fear, toward the glorious horizon of tomorrow

FOOTNOTE

It will be noted that in preparing this list many words, subject to a pungent and purposeful definition, suggest themselves. Perhaps our readers would like to keep this department going for awhile. If so, we will hold the space open as long as a suitable supply of material is made available. Who wants to lead off with such words as 'money,' 'city,' 'man,' 'incentive,' 'efficiency,' 'mousetrap,' 'hamburger sandwich.'

More Barriers For Progress

High, Wide, and Handsome

By Roy M. Elliott, R.D. 11732

'Man made himself out of an ape, partly by becoming an engineer. The danger is now that the process will be reversed and the engineer will make apes of all of us. We apes shall then destroy ourselves and hoist the engineer with his own petard. We must examine the paradox of a living being which creates inanimate things more powerful and more nearly perfect than itself, with potentialities either for the salvation or the destruction of the inventor.'—Ernest Albert Hooton, Professor of Anthropology, Harvard University, in his book *TWILIGHT OF MAN*.

Sap or Sapiensis?

Mankind is a unique animal. No-where does he find his 'equal' in doing things—mentally and physically. Yet, of all the beasts that roam the field, man alone continues, persistently and consistently, to do things that almost any other animal would have discontinued long ago, if it knew that self-destruction lies ahead. Old homo sapiens, dear old muddle-headed man, does nothing of the sort until forced (physically) to do so.

How do we know this is so? Look around and see for yourself. For example, why is it necessary to install traffic regulations at the busy intersections of our city streets? Something concerning the physical General Welfare, probably. The solution of this purely physical problem was not left to a few philosophers. Why? Because it is not a philosophic problem. We may arrive at an extremely accurate conclusion that if two autos are started toward each other and neither contrives to stop, the time and motion involved will cause an inevitable collision. If head-on collisions occur with sufficient tragic regularity to force a correction, the establishing of one-way drives gets results far in excess of any amount of moralizing via pulpit, radio, press, boyscout drives for 'safe driving' campaigns, or other like

methods. A white line or two down the center of the highway furnishes a guide for passing traffic, but a concrete barrier 4 feet high and 2 feet thick down the center would effectively prevent almost all head-on collisions. From these elementary observations, we see clearly that we need but recognize the physical factors involved and be guided thereby to adequately solve the problem.

Railroad trains rarely stop at highway crossings except by 'accident.' One positive way of eliminating grade crossing disasters would be to permit our technologists and engineers to design rail and highway roads with the accidents designed out. Simple? Just a technical approach to a technical problem. Results, adequate.

In the industrial world, it has become necessary to adopt Safety First methods for several reasons. The primary one, perhaps, is that accidents cost time and money. A physical injury to man or machine upsets operating schedules. After the safety engineer has despaired of reaching the lowest accident rate possible, by a series of 'preaching' lessons, some form of physical restraint in the form of belt guards, railings, covers, goggles, techniques, and the like, does the job. Here again the use of physical barriers gets positive results, simply because it is a physical problem which is involved.

Nowhere in America's Price System today is there to be found a condition of health, wealth, nutrition, personal achievement, living conditions for the populace but what could be improved were it not for the lack of the correct kind of barriers. Mankind, that unique animal, is in sore need of establishing some more physical barriers to prevent an increasing rate of social casualties from carrying the entire population back to a primitive and chaotic condition. America today is at the crossroads in the physical history of her national existence. Either we recognize that something adequate must be done and proceed to do it, or we (most probably) will suffer the loss of three-fourths or more of our total population in the resulting disintegration of our national entity. The law of chemistry works in America, the same as anywhere else. This is just another way of saying that starvation causes death wherever starvation occurs.

To avoid chaos in America now becomes our common problem. Or are we different than the other animals in our 'instincts'? Are we deliberately trying to 'rub' ourselves out? Let us proceed upon the assumption that we are by instinct not different from other animals. Let us assume that we have a higher degree of intelligence. So, let us examine the problem for a clue as to what kind it is. Knowing what kind it is will assist in the correct approach for adequate solution.

The Equality of Necessity

In spite of all the philosophic nonsense about man being 'equal,' it remains a matter of fact that man is not equal except in a very limited degree. Mentally, no, physically, no. If not in these, where is he equal? There is one characteristic in which mankind is positively equal. The biological requirements, such as eating, sleeping,

mating, clothing, is common to all. While the degree of requirement differs in lands and climes, all men must of physical necessity engage in eating or starve. All require some degree of shelter from low temperatures. Our concentrated populations require some clothing. Need we go into the matter of mating, in order to continue the existence of mankind? Here in these various biological necessities we certainly have a common basis, an equality among men, that admits little, if any, variation.

Proceeding a step further, if food, **shelter and clothing** are common to all, this constitutes a common problem for each and every one. We need not investigate exhaustively to determine that mankind's physical environment here on earth has been a long history of scarcity for the majority, and abundance for the few. Scarcity has been the driving urge to acquire what there was to be had. If there were a few head-cracking episodes in the process, we may be sure that the environment of scarcity caused such behaviour patterns. Man 'loves' his fellow man up to the point that he will eat his brother (physically) if he gets hungry enough. Biologic requirements supersede abstract concepts.

Having determined that our problem is a physical problem, we must treat it as any other technical problem. We must use the scientific approach, the functional method. To understand fully the accuracy of this conclusion, you are invited to a consideration and investigation of the work already done by Technocracy Inc. The findings of Technocracy are just like any other collection of facts. They cannot argue, compromise, retreat. They simply exist. What we, as Americans, do about it is of extreme importance because we have before us the evidence to prove that self-destruction is immi-

ment if we persist in a continuation of the status quo. The position of Technocracy in this matter is similar to that of the weather man. The weatherman doesn't make the weather; he simply predicts it upon the basis of observations made and information received. Technocracy is not making the social cyclone that is drawing steadily nearer to our social economy. Technocracy is merely predicting it on the basis of observations and information available to any one interested enough to investigate and observe.

Next Most Probable

Technocracy's design is the result of observations made and information gathered from many sources. This design is dictated by the facts involved, not guess-work or opinions. This design is a collection of physical facts, outlining the physical barriers that must be set up to prevent Americans in America from hitting the 'ditch' in our social world.

Technocracy challenges anyone anywhere to present factual evidence to prove Technocracy in error in its analysis of America's economic dilemma. To date Technocracy's design has never been factually assailed. Technocracy's design is but the functional approach to a technical problem. This approach will yield results the same as any other technical problem yields to a technical approach. Just as we abandoned our former concepts about what constituted 'fast' mail in the days of the horsedrawn stage coach, so we will, of necessity, have to abandon our present concept of work, debt, leisure, money, taxes, and standards of living for a new concept of abundance. The need to create a system of distribution for the adequate disposal of this abundance to the population of the North

American Continent is now being demanded by the march of physical events.

Right here, someone says: 'You can't do that; the rich man won't permit it.' We ask: 'What is the rich man going to do about preventing ANYTHING when the Price System in America folds up and collapses, and his money becomes worthless?' Wishful thinking is for the propagandist and the uninformed Price System 'free enterpriser.' The fact is that America's Price System is doomed to an early end, simply because it is unable to make the required changes and still remain a Price System. Only a system of distribution expressly designed for the purpose can distribute an abundance.

The march of events is demanding that we North American's recognize the futility of attempting to bolster an American Price System and its present concepts and institutions. A clean break with things as they are is required. Here is where mankind reveals himself as unique. He can, voluntarily and deliberately, lay aside the old, outmoded concepts and proceed to something more adequate. No other animal but man can do this neat trick of setting up such a system of physical barriers for avoiding self-destruction.

Technocracy's design is the vehicle standing ready to convey man into a New America of Abundance. All we need to do is to get in this vehicle and start for our destination. Whether we do this voluntarily now, or by physical force later, is not yet known. This really does point up the question: 'Has mankind in America the ability to use his intelligence, and if he HAS, what's holding YOU back?'

Join Technocracy now!

Air at zero temperature contains 73 BTU'S of heat in every pound.

Dictionary Of The Price System

A Word A Day Keeps the Fog Away

By Sam Pavlovic, R.D. 9344 and James Winston, MAL

VESTED INTEREST—The legitimate right to something for nothing.

PHILOSOPHY—Mental jaywalking that never arrives anywhere.

LIBERAL—A person with both feet planted firmly in the air.

POLITICAL ARENA—That's where the bull is.

LAISSEZ FAIRE—You work your side of the street and I'll work mine.

REFORM—Covering up an old stink with a new one.

INCOME—The amount of money you get that you have to spend more than to get half enough to live on.

INFLATION—Instead of not having the money you haven't, you'd have twice as much, but it would be worth only half of what you haven't got.

POLITICAL ECONOMY—Getting the most votes for the least expenditure of money.

CIVILIZATION—Something that has reached all people except those that have no resources worth stealing.

POLITICIAN—A guy who never breaks a promise without giving a bigger one in its place.

MONEY—The stuff that talks but never gives itself away.

EROSION ENIGMA—The American rivers that are too thick to swim in and too thin to plow.

AVERAGE AMERICAN—A chiseler temporarily embarrassed for funds. This temporary embarrassment usually lasts a lifetime.

HONEST POLITICIAN—One who when bought will stay bought.

DIME—A dollar with all the taxes taken out.

INTERNATIONAL DIPLOMACY—The art of letting some other country have your own way.

CORPORATION LAWYER—Watchdog for a vested interest.

ECONOMICS—Modern mythology.

MONEY—Medium of interference to the General Welfare.

BUSINESS BAROMETER—Statistical method for measuring the 'take.' When it falls too low, free enterprisers take to jumping out of windows.

AUTOCRACY—A system in which the top dog robs the people and murders those who protest.

DEMOCRACY—A system in which 'free enterprise' swindles the people and labels those who protest as communists and crackpots.

TECHNOCRACY—A system with-out top dogs, robbers, swindlers, or free enterprisers.

PART TIME SCIENTIST—A person who uses the scientific method when he is surrounded by scientific instruments but who reverts to philosophy and politics when he is surrounded by social problems.

American Continental area into a Technate would wipe out all city, township, county, state, provincial and national political boundary lines, permitting an overall, coordinated design of operation.

Technocracy's engineers have designed a system of Continental Hydrology for flood and erosion control, irrigation, transportation, climatic modification, recreation, and adequate pure water for human consumption. Development and control of the Great

Lakes Water System is part of its design.

Not until Technocracy's Continental Hydrology system has been put into operation will it be possible to get pure drinking water in many industrial centers. Solution of North America's water problem will be one of the top objectives of the Technate. It will be solved then—but not before then.

Join Technocracy, and help to build a clean, New America!

From Here on Out

Keep Your Eye On The Trends

by R. F. Novalis

Increasing Trends..	All-Time LOW	Latest HIGH Figures*
1. DEBT (U. S. Govt.) per person.....	January 1, 1840 \$0.21	1,914 Dollars
2. ENFORCED LEISURE (unemployment.....)	October 1944—630,000	2,150,000 People
3. MACHINE TOOLS in use** (cumulative total).....	1925.....700,000	1,884,900 Machines
4. BANK LIQUIDITY (percent deposits to reserves, Federal Reserve Banks).....	1921.....60.0%	98%
5. GOVT. (U. S.) BONDS to total bank invest- ments (Federal Reserve Banks).....	1929.....39.0%	92%
6. GOVT. (U. S.) BONDS to total life insurance investments	1915.....0005%	63%

Decreasing Trends	All-Time HIGH	Latest LOW Figures*
1. PRODUCTION (combined factory-mine-railroad freight) Index basis 1919-20 monthly aver- ages equal 100	Oct.-Nov. 1943—250	172
2. MAN-HOURS WORKED (total of man-hours in factory-mine-railroad) (Note: 1919-20 month- ly average was 2.54 billion) Actual number.....	Oct.-Nov. 1943 3.14 billion	2.26 billion
3. MAN-HOURS PER UNIT in above industries, combined average	1919-20—100	41
4. ENFORCED SCARCITY (load factor on installed capacity of above industries)	No Figures	24%
5. INTEREST RATES (combined average yield on Govt.-municipal-corporate bonds)	1919-20 6.12%	1.68%
6. OSCILLATION DOWNWARD of factory output since all-time peak (Oct.-Nov. 1943)		32%

*July-August, 1946, Two-month Average.

** No figures available on number of machine tools scrapped

Oldest Racket of Them All

Taxes—They Support What?

(Part 1)

By A. E. Borel, M.A.L.

Remember the old saying that only two things on earth are certain, namely, death and taxes. Well, at least 50 percent of that old saw is Price System propaganda. Death comes to all men in equal measure, but not taxes. Some get off lightly, some pay heavily. It depends on how good a chiseler you are. Death is unavoidable as far as we know. This article does not deal with it. Its story is concerned with the 50 percent of that old saw composed of bunk.

If you want to know what taxation is, how it started, how its original purpose was prostituted by the Price System, and what its true function is, you cannot afford to miss this serial. Most articles about taxation are dry as dust, but not this one. The ending will surprise you. It will give you a new slant on Technocracy. Due to its length, we are compelled to print this story in three parts. Don't miss any of them. Here is part one.

Jack: 'Hello, Bill, Going my way?'

Bill: 'Yes, Jack, I am. Glad to see you this fine morning. If it wasn't such a nice day, this job of figuring my income taxes would be getting me down. How do you make out on it?'

Jack: 'Oh, ho, so you are a worried man about taxes, eh, Bill? How about living in a Technate where you won't have to worry about taxes. Be kind of nice, wouldn't it?'

Bill: 'You said it, Jack. It is quite a chore to keep up with taxes, and yet we have to do it. You did prove to me that we didn't own anything, really. Yep, even the money we receive as pay is taxed, and that tax can be raised or lowered at will, to include or exclude as many types of income as desired. If I don't tell the truth about my income, they can fine me, put me in jail, or both. So, I don't even own my income.'

Jack: 'We call that the "workings of a free democracy" Bill, but I have a hunch that an awful lot of people would forget to let their patriotism be their guide if there were no penalties. We all know that any gov-

ernment has to be supported, and the only way it can raise money is by taxation in some form or other. But we all have the same kind of psychology when it comes to taxation. I have never seen anyone yet who donated cheerfully.'

Bill: 'You said "donated," Jack. What do you mean by that? A donation is a gift. When you donate something you don't expect anything back. We expect to get something back from our Government when we pay taxes. We get lots of services from our Government.'

Jack: 'Yes, Bill, that is true. We do get lots of services back from our Government. More so, probably, than most any other government. Have you ever stopped to figure all the things that our Government is trying to do on taxpayers' money? That may sound foolish in view of the comments on all sides deriding the Government for its manner of "squandering" money. But, it's a fact to bear in mind as we go along. There are many services being performed by any government, but most particularly ours,

for which the average taxpayer can hope to receive no returns. Aren't we merely "donating" this money?"

Bill: 'I suppose so, Jack. But the other time we talked about taxes you called them a "rental." How come?'

Jack: 'Fair enough, Bill. All taxes are a rental. They are the rental we have to pay merely to live where we live. Much of the time, for most people, this rental takes the form of a "donation," but we've got to pay it just the same. Most of us can't get away from it. But there are some people who can't pay this rental, so other people have to do it for them. This is the point at which our society and most societies since social life began have fallen down. We have failed to realize that for each person who is unable to pay this rental (taxes) someone else must pay it for him. In some form or another, taxes are the rental someone must pay so that they themselves, or someone else, can live.'

'You see, Bill, there are many ways of paying taxes. They do not always have to be paid in money, as you will find out later. The tax that you pay that someone else may live is a "donation." You don't get anything back except the satisfaction of having done a duty. Every one who is able, whether he be a Democrat, Republican, Fascist, Communist, or Technocrat, must pay this tax.'

Bill: 'Well, Jack, what in the world kind of a tax is that? Technocrats say you don't have to pay taxes in a Technate, yet you try to tell me that the Technocrats will have to pay taxes!'

Jack: 'Bill, this is only my own way of analyzing taxes. I feel that this matter of taxation has never been thoroughly studied. That is, we have always approached the subject with preconceived notions and ideas

so the true meaning of taxation has been lost. If you have the time, I would like to give a brief review of the beginning and growth of taxation.'

Bill: 'Go ahead, Jack. I feel that taxation is one of the most vital subjects with which we must deal, so it's time out for me while you elucidate.'

Jack: 'Thanks, Bill, but first let me give you what Webster says about taxation. It will help you a lot if you will remember these terms when I speak of taxes. Will you do it, Bill?'

Bill: 'Yes, I will, Jack, but you can remind me about them once in a while because there is too much for me to keep in mind.'

Jack: 'I'll do that, Bill. Here is what Mr. Webster says: "Taxes, noun, (a) a burdensome duty; (b) an exaction; (c) a contribution levied by authority."'

Bill: 'Some hard names, Jack.'

Jack: 'You bet, Bill, and please note that in none of these expressions is there any indication that taxes are considered a "just" duty. From these definitions, Bill, it can be seen that a return service from the Government to the taxpayer in return for the payment of taxes is not necessarily inherent in the idea of taxation. Remember that. That idea has been developed gradually in the minds of the people, that is, that they are entitled to get something back for their taxes. At first, they accepted taxation exactly for what it was, and is, "a burdensome duty." Before I am through, you will realize that the average taxpayer gets back, personally, only a small portion of his tax money in services. Taxation is a lottery, we all pitch something into the pot, but only certain ones draw anything out. For instance, we all pitch in to support a fire department, but

only the guy whose house is burning down has use for it.'

Bill: 'I guess most people consider it that way too, Jack.'

Jack: 'Well, here we go on the green light, Bill. In the very earliest dawn of social life on this planet, certain men began to be leaders in their community. Since studying Technology's Study Course, I might guess that these were natural born leaders. They were the number one men in their communities. Whether they were "good" or "bad" leaders is immaterial to our point. At first, these leaders were leaders, most likely, because they were always in the forefront of every action, they were leaders because of their ability and courage. The time came when many were leaders because of their cunning, the monopoly of tricks amongst a select few and the maintenance of the greater number in ignorance. At first, the leaders probably helped provide and produce the necessities of life and took part in all community activities. A time came when the leaders sat back and ordered instead of leading. When that time came, Bill, the leaders no longer providing or producing the needs for their own sustenance, commanded that these be furnished to them by *right of their leadership*. You know, my friend, it is not many decades since civilization cast off its belief in the divine right of kings. Thus, probably, was created the first form of taxation. It was the furnishing of a living to the leaders of the community, the head man of the tribe, the medicine man, later the priest and the king.'

Bill: 'Whether or not that is the way it happened, no one knows for sure, Jack, but it makes a pretty good story. It certainly sounds reasonable. We have very few facts on which to go. Please go on.'

Jack: 'Thanks, Bill, but I won't mind your arguing the point, if you don't agree. Anyway, that is only the part of our story dealing with how taxes began and how they operated in the past. And that is where, I say, all societies have failed to grasp the true function of taxation. In the past the members of a household, tribe, community, clan, or nation donated or bestowed upon the head man, witch-doctor, priest or chief, part of the spoils of the hunt, the produce of forest and field, the catch from river and lake. For this they received some service in return, but knowing the set-up as we do we may feel fairly safe in saying that most of this service went to a favored few. The point I wish to make though is that it was taxation, remember the definition "a contribution levied by authority." It was for a specific purpose, the support of that authority. Let's call this authority, Government.'

'But there was another donation made at that time which history or the story books do not relate. It has never been mentioned because it never entered anyone's mind to consider it as a donation. That other donation was for this, the support of the young, the old, and the helpless members of each family. In the light of future arguments along this line, we will find this an important point. It is necessary for me to show that this support of the members of one's family is, actually, a form of taxation.'

Bill: 'Do you mean to tell me, Jack, that the support of one's family is a form of taxation?'

Jack: 'Yes, Bill, that is exactly what I must do to prove my point. We can only guess at how early man divided up his food among the members of his household, but divide it up he did. He must have. Let us take just one small family,

a father, mother and one child. The father furnished the food, the mother did the cooking, the child did nothing. In other words, the father and mother each exchanged services, they contributed something to the arrangement, they compensated each other's service. The child had nothing to give, there was nothing it could do. Do you get it, Bill?

Bill: 'Yes, I can understand that, Jack.'

Jack: 'The action which takes place here, Bill, is so ordinary that I know of no case where it has ever been called into question. Yet we have here the most elementary form of taxation. The father and mother each tax themselves for a certain portion of their food, their clothing and their shelter to supply some one else who has nothing to give in return. This is a natural instinct, fundamental in all life where a parent takes away part of its own to give to its offspring. It not only gives part of what it obtains, it will even deny itself that its offspring may receive. This is the second of the two greatest instincts in life, self-preservation and reproduction.'

'No matter how much we may philosophize about this act, the fact remains that it is a form of true taxation. It is the levying of a tax by an individual upon himself to give to the support of another. The fact that this other one is a member of his own family and household does not alter the matter in the least. By giving support to this other, he is depriving himself. It is an exaction, it may even be a "burdensome duty," and that is taxation.'

'When man began his social life, without a doubt all things were shared in common. That being the

case we can readily surmise that when the spoils of the hunt or fishing were divided up each family was given its share according to its needs. Advancing our story from the family to the community and applying the same measuring stick, we can see, now, that the community in like manner to the family taxed itself to provide for the support of those who could not provide for themselves. Of course we realize that in some civilizations incompetents were liquidated but that is beside the point and proves nothing. So, let's resume.

'In this community it was not a question of each father providing for his own without help from the others even though he was responsible for their existence. Whenever that was the case, the family probably soon perished. So those who hunted and those who cooked each gave service amongst themselves which was compensated for by some other service. But each, also, deprived himself or herself to give to those who had no service to give in return. That, also, was true taxation. At times, it may have been a burdensome duty. Have I made myself clear, Bill? We must get a clear perspective, we must get away from a lot of fanciful ideas we have had.'

Bill: 'Well Jack, I'd rather you go on. I know that isn't the end of the story.'

Jack: 'All right, Bill, but I want to stress again this one point. Each family received according to its need and not according to the ability of the man of the family to provide or the mother to cook. This simply had to be the case, because each was so completely dependent upon the other. Each member of this primeval community, then, who was able, male and fe-

male, taxed themselves, *first*, to provide a living for the dependents of the community, and *second*, to provide a living for the head men of the community. I think I am safe in saying that the headmen came second in this early community. That, to our shame, is not the case today.

'What I am trying to drive at, Bill, is so unique I don't know how to state it. I am trying to say that, in early communal life, all members partook of the living provided but that somewhere along the line we got the idea that the head of each family was responsible, solely, for his whole family for better or for worse, and the burden was shifted to his shoulders. From that time on the family no longer received assistance from the state, if we care to call it that. Each family was on its own. The taxes of the community shifted from the support of all members of the group as number one to the support of their headmen as number one. There was no number two.

'Of course, Bill, this change came about unconsciously because no one ever looked upon the furnishing of a living to the members of the family or group as a form of taxation. What probably happened was that the headmen started demanding more which resulted in families getting less. By and by the headmen demanded so much from each family that no one family had much of anything left over to give to its neighbor. As the power and demands of the headmen increased the poverty and wretchedness of the people increased. In time the entire scheme developed into a system of great splendor and display through the donations, the taxes, of the people; whereas the condition of the people was such that it is referred to by the ancient writ-

ers as "the grinding of the faces of the poor." The thought that the group was responsible for each of its members had been forgotten long ago, so the parents have ever since been left to fight it out alone. A very few small concessions have been made in recent years. Unconsciously, today, we admit that supporting a family is a form of taxation. In our income tax system, the larger the family the less the income tax. It is a form of saying, "You are taxing yourself to support your family, so we will demand less tax from you to support the people in Government." However, the state sales taxes throughout the country are one of the most unfair forms of taxation imaginable. The larger your family the heavier the tax you must bear, regardless of the size of your income. It reverses the process of taxation with respect to the income tax. It penalizes the man with the large family. Do I make myself clear, Bill?

Bill: 'You sure do, Jack, when you put it that way. Take my case, for example. My wife and I have raised seven children on the same salary and sometimes less than many another in my same station in life who has only had a wife and himself or maybe one child to support. With all the bills I've got, how can I possibly compete with this other man? What chances do my children have? I've often thought of the discrimination in it but, like you say, we have all just accepted it as one of those things. We have accepted it as a "duty." We, of course, wouldn't call it a "burdensome duty," but, because the burden did get heavy sometimes, we would call it a "burden of love".'

Jack: 'Yes, Bill, we call it a "burden of love," and through centuries

of time people have suffered under the indignities of it. We Technocrats realize that nothing could be done about it because of ever-prevailing scarcity. The moral rights or wrongs of things never have counted, except on a very small scale for a very few people. The moral rights or wrongs of things have

never yet solved one physical problem. Today, the moral right or wrong of whether a man is responsible, solely, for the upbringing of his family will fall before the onslaught of the tide of abundance.' Bill: 'How is this going to be done, Jack?'

(continued in the next issue)

'Pop' Lays It on the Line

Value is defined sometimes as the measure of the pressure of the force of desire. Of course, an undefinable desire cannot create any financial value or create any demand. He who is without debt claims is unable to make demands. Did you ever think how much time is worse than wasted, creating desire on the part of people who are not in a position to demand? Financially 40 percent of the population cannot demand anything not necessary to a bare existence, 92 percent cannot demand enough to create a decent market. The 8 percent that can buy have all they can use. Who made that kind of rules?

When human beings supplied a large share of the energy necessary to operate the social mechanism, it was necessary to develop the morals in order to get the work done. 'He who does not work neither shall he eat,' and 'by the sweat of thy brow thou shall eat bread' was preached by those who were above work and ate the best. The classical economist stated as a premise, 'Labor produces all wealth.' Poverty was maintained to preserve power in the hand-powered age. We still preserve poverty in order to maintain the rules of a bygone age.

Most Americans are scheming or pipe-dreaming about muscling in some little jitney racket. Science and technology are

operating to dispense with muscle power by the use of automatic machinery. The sale of muscle power is becoming a wash out. The muscle man cannot even be a sucker any more. Better muscle out, Brother, the racket cannot keep up the pay-off. The would-be chiseler is the biggest sucker.

The great mass of people are quite incapable of thinking socially, as long as the environmental conditions permit them to pursue the even tenor of their ways without serious inconvenience. The margin have the capacity to anticipate and to prepare for changing social conditions before hunger compels them to. If you are a member of the margin, this is your invitation to join Technocracy and investigate its purpose and program, Now. Your response will indicate in which category you belong.

Brother, what is your racket? How are you plotting against the people to collect debt claims in order to live? Which gang do you belong to, to promote your social prestige as a spare time hobby in this culture of conspiracy? How many conspiracies do you help to promote in order to beggar the other fellow? There is one organization that recognizes that your interest is tied up with 200 million other Americans. How about a little check on Technocracy some time soon?

'When Apples Grow on the Lilac Trees'

What Price Peace?

By L. W. Nicholson, R.D. 8234 and the Peripatetic Technocrat

'War should be the only study of a prince. He should consider peace only as a breathing-time, which gives him leisure to contrive, and furnishes an ability to execute, military plans. — For war is the sole art looked for in one who rules.' (Nicolo Machiavelli, 1469-1527, Florentine diplomat and writer.)

'All the talk of history is of nothing almost but fighting and killing, and the honour and renown which are bestowed on conquerors, who, for the most part, are mere butchers of mankind—.' (John Locke, 1632-1704, English physician, writer and philosopher.)

'There never was a war at arms that was not merely the extension of a preceding war of commerce, grown fiercer until the weapons of commerce seemed no longer sufficiently deadly.' (Brigadier General Hugh S. Johnson, U.S.A., 1882-1942, American soldier, lawyer and one time Administrator of the N.R.A.)

Music Goes 'Round and 'Round

IT IS generally agreed that war must not again be allowed to destroy men. Since we are agreed on this point, no further discussion is needed. However, it is not generally agreed as to the proper method to eliminate wars. Therefore, it is the means by which this may be accomplished which needs understanding.

Before repairing an automobile engine, it is necessary, first, to find the cause for its failure to operate. To eliminate wars it will first be necessary to find the cause and eliminate this cause. Thereby we may eliminate war.

What causes war? The answer can be given in one word, SCARCITY. Eliminate scarcity and not only war but crime, disease, poverty, ignorance, politics, free enterprise, fascism and all companion characteristics of Price System operations will automatically go down the drain.

World War II demonstrated that, as far as North America is concerned, we can eliminate scarcity at any time we are willing to give up business and politics in order to do so. These institutions are the cause of scarcity to-

day on this Continent. Abundance destroys value and hence price; profits cannot be made without price; business cannot exist without profits. Ergo: Scarcity is a MUST. Politics (the referee) cannot exist unless there is the struggle of scarcity acquisition to referee. Ergo: Politics must maintain the status quo. If you can disprove this, you will obtain the everlasting gratitude of business and politics. They will enshrine you above even Machiavelli and Adam Smith.

We, as a people, up-to-date, have been content to allow business and politics to tell us how to solve our problems. As a result, it is impossible to eliminate wars. What free enterpriser would be willing to go out of business; and what politician would be willing to resign from office as a patriotic duty to his fellow man? What newspapers, being business organizations, would be willing to print factual social information if it were given to them free of charge? How many upholders of the status quo could be expected to investigate far enough to get the knowledge necessary to realize that they as well as the balance of the population would

be better off if they removed their interference to America's destiny. The answer is that these gentry will consider this matter if, when, perhaps and but. In the meantime, business is business, so don't mess around with the appplecart.

Echo Answers, Where?

Now, let's go back to our main theme, the elimination of war. Since scarcity is the cause of war and abundance the cure, it becomes obvious that no Price System international powwow can have the slightest interest in abolishing war. The forums and conclaves of these honorable gentlemen are but window dressing for the Status Quo. Back in the store, business goes on as usual by the time-tried rules of buy low, sell high and keep things scarce. There dwells the sacred white cow of Things as They Are. It is untouchable.

The Price System will try every means short of war to eliminate war. If these don't work, it will cheerfully go to war for the sanctified purpose of abolishing war. We have waged two world wars to end war in the last generation. Haven't we? You know the answer. Perhaps you were there, Charlie! Well, it may not be long now until some of us are there again. American pro-fascism is busy cooking up another war to end all wars. The next one will be a holy war against the dark forces advocating strange doctrines favoring the General Welfare.

Good old free enterprise and party politics will have no 'truck' with such foreign ideas. Why! They ain't even in the Constitution. Of course not, what kind of a Constitution do you think we've got? Well, yes, there was something said about stuff like that a couple of times in our history. There was Roger Williams (1609-1683), founder of Rhode Island. He contended that all the land belonged to

the people. There was Tom Paine (1737-1809), outstanding Revolutionary figure. He wrote something about *The Rights of Man*. And Abe Lincoln (1809-1865) said: 'This country with all its institutions belongs to the people who inhabit it.' But, these characters were considered 'Reds' in their day. And, we put them in their proper places, didn't we? You betcha! That foreign stuff don't go in free America. But let's get back to our theme again.

Open Sesame!

There is only one way under the blue dome overhead that war can be stopped. That is to scrap the Price System and install a technological social system. Atom bomb or not, you can depend on it that as long as the Price System lasts, there will be 'wars and rumors of wars.' Times almost without number, when internal social problems became acute, nations have adventured into the external escape of war. It's an historic pattern that has always worked. The Society of International Law of London, England, has estimated that in the last 4,000 years, the Price System has produced 8,000 peace treaties *but only 268 years of peace*. 'Blessed are the peace makers.'

The only potential on this earth that can stop war is the North American Continent organized into a technological system. Nothing else will avail. Technocracy Inc. has the design for this major social advancement. The price of peace is the scrapping of the Price System in North America and the installation of a Technate. Not a single human being need have a tangible thing to lose by this social change.

The Price System has nothing more to offer except more depression and more war. It has outlived its day. Its ancient, outworn concepts are in con-

flict with the rising power of science and technology. These alone hold the correct answers to mankind's cherished aspirations. The Price System is a 'has been.' It is wobbling badly in North America. The danger is that it may collapse before we are ready for that glorious event and carry all civilization with it.

So, get wise, Brother, get wise! Quit looking for that which cannot exist within the framework of the

Price System. Quit wishing and dreaming. Get to work and do something effective about war. Join Technocracy and work for the New America. If you expect the Price System to eliminate war, you must logically expect the Price System to abolish itself. When that day comes to pass, there will be a snow storm in hell worse than the blizzard of '86. And then, my friend, apples will grow on the lilac trees.

Never Sell the Facts Short

In the United States, people at first lived in a kind of hand-to-mouth existence. Many of them worked 12 to 18 hours a day. They had to work a good many hours because they couldn't turn out a great deal of anything with the poor tools and machines they had. They needed power machines on which to do the work instead of doing it by hand.

As the years went on they got more and more power equipment. The power used in making things in factories went up from 1.25 horsepower per worker in 1879 to 4.91 in 1929—nearly quadrupled in 50 years. It is estimated to be now about 7.25, almost six times that it was in 1879.

This increasing power has enabled factories to produce more and more things per hour of work per man, which means they have increased 'output per man-hour.' (*Factory Management and Maintenance*, August, 1946.)

* * *

The physical wealth of the population is the net output of the social mechanism used by the population and to be wealthy in this sense is to destroy goods and services by use. The whole process of events from raw material back to earth can be measured in energy degradation. Financial wealth is concerned with obligations between people and is entirely dependent on imponderable concepts. How

about acquiring some real concepts in Technocracy?

* * *

There is no physical reason why you should do without anything you can use. The basis of the rules that compel you to do without things were laid long before you were born. Why not help to make a set of non-interference rules for this new society Technology has produced.

* * *

Technocracy does not try to convert any one or to change their opinion. After all, changing one's conviction can be done too easily, and so far as Technocracy is concerned one opinion is no more important than another. The time spent arguing about opinions might be spent much more usefully in investigating the confirmability of Fact. If it is a matter of opinion, we can afford to forget. If it is a matter of fact, it is subject to investigation. How about a little mental housecleaning o keep these concepts each in its proper place.

* * *

If you have no other source of information except that supplied by the radio, the press, and the screen, you are mentally unable to face your future. Technocracy Inc. can supply you with factual information freed from any and all Price System propaganda. How much longer will you continue to be misinformed?

Dictionary of the Price System

A Word A Day Keeps The Fog Away

By J. C. Stafford, 8439-1 and Others

FREE PRESS—An advertising medium in which the spaces between the ads are freely used to conceal the facts.

NEW DEAL—The political policy that saved business from frying in its own pan. Now that business is out of the frying pan it is jumping straight into the fire.

INDUSTRY—The process of producing physical wealth.

BUSINESS—The process of keeping us from getting enough of it.

PRICE CONTROL—Rules made by the Government for the orderly conduct of a free-for-all fight in the market place.

PROFIT—The net 'take' from any racket after all the suckers have been 'taken.'

FAIR PROFIT—All you can get.

FAIR WAGES—The least that will be accepted short of a strike.

CONFIDENCE—The smokescreen behind which Free Enterprise operates.

VALUE—The quotient of scarcity divided by need.

PRICE—Expression of the above equation in money.

FACT FINDING—A process whereby a committee searches for facts everywhere but where they are. Witness the conspiracy of silence regarding Technocracy.

SPHERE OF INFLUENCE—The areas contiguous to any nation that are within the fire range of its available weapons.

ATOM BOMB—An instrument of obliteration conceived in prayer and humiliation and used to promote the Four Freedoms.

ARBITRATION—A delicious procedure wherein two business men and one worker decide how much labor gets. One of the business men is always called a Representative of the Public.

GEORGEITIS—A typical American disease symptomatized by the crack: 'Let George Do It.'

DESERVING APPLICANT—A banker's term, designating a man who keeps his financial affairs in such a shape that he can tell the banker to go to hell. (Simplified Economics, April, 1945.)

PREJUDICE—A vagrant opinion without visible means of support (Ambrose Bierce).

EDUCATION—That which remains after one has debunked everything he learned in school. (American Freeman, March, 1947.)

ENGINEERING: The art of organizing and directing men and of controlling forces and materials of nature for the benefit of the human race. (From a mural in the Engineering Society's Library in New York City.)

'Our merchants and master-manufacturers complain much of the bad effects of high wages in raising the prices, and thereby lessening the sale of their goods both at home and abroad. They say nothing

concerning the bad effects of high profits. They are silent with regard to the pernicious effects of their own gains.' (Adam Smith, 1723-1790, in his book *The Wealth of Nations*.)

Oldest Racket of Them All

Taxes—They Support What?

By A. E. Borel, MAL

(Part 2)

There are supposed to be only two things on earth that are absolutely certain, death and taxes. This article undertakes to blast the last half of that fable into the limbo where it belongs. Before the end is reached, you will agree that the author has given a brand new slant on taxes.

In the first part he traced the beginning of taxation. He showed the original purpose of taxes and how the Price System subverted that purpose to its own ends. At first taxation was a voluntary social donation in the collective interest. The Price System turned it into a compulsory contribution and a 'burdensome duty.' It put the jingle into taxation and made it profitable. Julius Caesar is reported to have said that collecting taxes was the chief business of conquerors. So, you see this racket has been going on for a long time.

The article continues its dissection in this part. Particular attention is given to 'Free Enterprise' and its major role as an anti-social beneficiary of taxation. When you get through with this article, you will know just what your taxes support.

Jack: 'Well, Bill, the time has come when the form of true taxation must no longer be laid on the shoulders of the individual parents, or any individual who is the responsible head of a family group. To show the direction in which social thinking is being driven by the trend of events, even under the Price System, just listen to this. It is part of an editorial that appeared in the Grants Pass, Oregon, *Daily Courier*, September 26, 1946.

Often times it would appear that the community was "overtaxed" as solicitation is made "for this and for that." No sooner is a drive for funds to combat infantile paralysis concluded than a drive is started for the Red Cross, then the Community Chest, and so throughout the year; and then there arrives a new year and we start all over again. . . . For after all, part of our life is dedicated to the helping of others . . . Perhaps the reason we are dedi-

cated to share our life with the rest of humanity—is that we know not when the same affliction might be visited upon us. There is no substitution for preparedness regardless of the station in life or the direction traveled.

You will certainly be able to connect up that with what I have been telling you. The editorial calls this constant giving 'taxation.' You will note that it uses the word 'overtaxed.' It seems that we have advanced our conceptions that far at least. However, this is only a bare start. *This burden must be resumed by society as a whole.* That is the kind of taxation embodied in the design of Technocracy. There, in carrying out this design, is the tax even the Technocrat must pay.'

Bill: 'Yes, Jack, but how will he pay it?'

Jack: 'To answer this, Bill, I must show you to what uses taxes have been put. All taxes collected are paid

out again in some form. For what purposes are they paid out? I will line it up this way.

'First, taxes are paid to *support* people who constitute "*The Government*," the term in this sense being used to designate all "elected" personnel, persons who "assume" or are appointed to the role of Authority.

'Second, taxes are paid to *support* people who are the "employees" of the Government; the term in this sense being used to designate the personnel in the Government whose position is that of holding a "job" just like any one else would hold a "job."

'Third—taxes are paid to distribute funds to *support* people outside the above two classifications in line with programs established by the above first and second classifications.

'Mind you, all money is paid to *support* people. No money is paid for any other purpose. You may speak of spending money to build a dam. All you are doing is to pay out money to *support the people who are building the dam or others connected with the project in one way or another*. All money is paid to support people who receive pay for selling their claim to ownership of something, or who receive pay for energy expended, either mental or physical. That is what is done with the money paid out by Government.

'The first two classifications are clear enough. The one thing that is not clear is the great number of people actually supported in these divisions. Under "elected" personnel there is a great duplication of activities; in the work of the "employees" is greater duplication. Also, under the latter are many of the departments and bureaus

whose programs are specifically designed as aids to the favored few, or groups of minorities. As an example of the third classification, we have the disbursement of taxes as interest to persons holding the bonds of the Government. Does all this make sense, Bill?

Bill: 'Well, I think it does, Jack. Are you sure those three classifications cover everything?'

Jack: 'I think they do, Bill. You must be sure to note that I stressed "support." It must be stressed. *People's tax money goes to support other people! That is the whole purpose of taxes. When you once get that clear in your mind, you will then get it clear why there is no collection of tax money in a Technate.*

'Now, in this third classification, just who are these other people who are being "supported" at Government expense? Here is a list I made up.

'1. Bondholders . . . Most Government bonds are held by banks, insurance companies and corporations. During the war bond drives \$5,-000,000,000 worth of bonds would be allotted to the public for purchase during a drive and \$10,-000,000,000 allotted to the above-named groups. It was very noticeable that the amounts allowed to the corporations group were always quickly over-subscribed, while the amounts allotted to the public were bought more slowly. From this you may estimate who will receive the greatest interest from the bonds.

'2. Crime, criminals and convicts. Our bill to combat crime, incarcerate criminals and support convicts is mounting so rapidly it is alarming the nation. Yet there is scarcely room to hold the convicted criminals, to say nothing of those who are on the loose. These peo-

ple are not primarily to blame. They are the product of our civilization! But—our tax money goes out to support them.

'3. Insane. Our institutions to take care of the insane are inadequate, yet the number of victims of this malady is growing continually larger. Again, these are the products of our civilization. We pay this bill by denying ourselves something.

'4. Free Private Enterprise. The bill to support free private enterprise will never be figured. "Free enterprise is so costly to the General Welfare that its bill is beyond computation." Farmers are free enterprisers. They are a minority group. In the 1930's Depression, the mass of the people were taxed to pay farmers for the destruction of their food products and other products of the farm, and the non-planting of their acres so that higher prices would have to be paid for what finally reached the market. Why? Simply to create the necessary scarcity which was required to maintain the price. It was necessary to maintain prices under the plea that the income of the farmers had to be maintained or raised. The income of the farmers had to be raised to maintain the *illusion* that they were living under a Free Private Enterprise System, which in reality was supported by taxpayers' money! Right now it is subsidies all down the line. Who pays the subsidies? The taxpayers, of course! So charge this against free enterprise.

'At the same time that people were being taxed to support farmers in a state of non-production, they were being taxed to furnish a subsistence living income for other millions of people who had no income at all! Remember WPA, PWA,

CCC and so on? Could that happen again? This has to be charged on the bill against free enterprise. 'Just to show you how far we went in the direction of helping people, the national debt at the beginning of the 1930's depression stood at around \$9,000,000,000. At the beginning of the spending spree to put us into World War 2, it was \$45,000,000,000. This is a difference of \$36,000,000,000. In other words, in the period between these two limits, we, a people sitting in a land "flowing with milk and honey" such as had never existed upon the face of the earth, a condition portrayed by the prophets of old as the acme of existence, we permitted ourselves to be talked into taxing ourselves all we could possibly pay and, in addition, went into debt to the tune of \$36,000,000,000 in an asinine effort to keep ourselves from having things. We destroyed the natural resources to which we had fallen heir; we destroyed the heritage of abundance which, through science and technology, have been built up. We abrogated the laws of nature in creating such a man-made poverty and scarcity that we could not afford to have babies; we lost the sense to look out for our own self-preservation.

'Why did we commit this heinous crime? Can anyone really tell us why it was done, without scorning the instigators! Can they try to explain, without stumbling over the words! Can they defend, and not have their faces turn red at such idiocy!

'When the story of the people of this generation is told at the judgment bar of history, it will be found that there is no social ruling group, all down the long corridors of time, whose head is worthy to hang

lower in shame, or upon whom shall be heaped more contumescence, than the Free Enterprisers of Free America. We have had, in our time and in our hands, the gifts of the ages, the fruits of science and technology; we have cast them from us for the gaudy baubles of "Price System" and "free enterprise." To whom much is given, much shall be required; and to whom men have committed much, of him will they ask the more! Who can count the debt we shall be required to pay! Can the Price System hope to escape?"

Bill: 'Jack, I'm dumbfounded. I really never looked at it like that before. All I can say is, we did it in our ignorance.'

Jack: 'Bill, that is not all of it. We have waged two World Wars in one generation. The mass of the people were taxed to pay high wages to minority groups of war workers and high profits to owners of property who were producing nothing of lasting value. At the same time, in World War 2, at least 65 percent or more of the population was receiving \$2500 a year or less. This was a total war. We were fighting for our life. We should have had Total Conscription all the time, the Total Conscription advocated by Technocracy. Shouldn't we charge this on the bill against free enterprise?'

Bill: 'That's right, Jack. I did talk Total Conscription to a lot of people and never found one against it. It's funny; everyone always approved. Yet it looks like nobody did anything about it. I suppose they figured, like everybody else, "what's the use."'

Jack: 'To continue, Bill, there are, also, loans and help to foreign nations. Need I discuss these? Even

supposing that the recent loans should be paid in time, would that wipe the slate clean? Would that repay the taxpayers for all the taxes they had paid in the interim? Might we not call these "a burdensome duty"? Yes, when one considers that we have to support people in other nations with these loans in order to create purchasing power there so that they can buy our stuff and thereby create jobs and purchasing power here! We'll have to put them on the bill for free enterprise.'

Bill: 'I know, Jack, but I am sure that they are doing that to help those poor people out of a jam.'

Jack: 'Far be it from me to be an iconoclast, Bill. I know that all of us common people are very much in sympathy with the peoples of these other nations. Might not somebody be taking advantage of this sympathy! I can accuse no one. I must confess to a great deal of skepticism as to the motives professed, especially when we are told that the purpose of these loans is to build up our foreign trade.'

Bill: 'Do they, Jack?'

Jack: 'Most assuredly, Bill. Want me to quote? Here's one. *Business Week*, April 4, 1946, page 21. It is a lengthy article entitled "Trade Stimulants." Under the heading "Foreign Developments" is described the duties of the Office of Foreign Economic Development. It says, and I quote:

Its job, broadly, will be to help foreign nations draft development schemes—in an effort to provide immediate markets for American capital goods and, by raising living standards (I'm underscoring that, Bill) to create wider markets for other U.S. manufactures and raw materials."

It's merely another case of taxing ourselves to make jobs for ourselves. We can't raise the purchasing power any other way!

'Oh, I know that all this has high sounding phrases that it is all in the interest of the common man, that it is being done to help him get "jobs." But we know we have a much better design, for furnishing "jobs" under Technocracy's plan for abundance without loaning our money to other people so we can give our stuff away to make "jobs" for ourselves.

'I know very well that a great deal of sympathy is being worked up for the people of other nations and we are being made to feel that if we utter just one squeak against the program we're anti-social and not fit to mingle with decent people.

'People think we Technocrats have no sympathy for other nations, that we are just looking to fill our own bellies. Everybody knows the mess we are in. After all, the common people aren't dumb. Now, if we can see it, so can the big shots see it. And they know that we can see it. So they try to distract our attention from conditions here at home by telling us how much worse off other people are. And, we must be Good Samaritans and give away everything we've got. That will be casting bread upon the waters which will return to us some day as big, fat, juicy contracts. These will then give us poor workers lots of work and big (?), fat (?) paychecks. If people could only realize that giving, and I do mean giving, our stuff isn't helping other nations so very appreciably and is only helping wreck our own economy faster, they would see that the proper solution to the problem is to save ourselves. Then,

truly, we would be in a position to help where help is needed.

'If the press, instead of ranting all the time against reds and fascists, would take the trouble to study Technocracy as the only social program which fits in with the intellectual and scientific age in which we live, they could soon point the way toward eliminating the factors which make reds and fascists alike. So we must put this on the bill against free enterprise.

'We also expect to have tourists over there. You bet. In the words of this article, these tourists "can be expected to spend \$1,000,000,-000 a year abroad, adding this sum to the earnings of foreign countries which can be spent on American products. Good old American dollars! What a gift to the world! But what guarantee have we that they will be so spent. Already we hear rumors that this is not happening.

'So, now you see where your tax dollar goes. I have not covered it all. If I were to quote you more on this trade business, you would soon get an inkling of the why of wars. But you can read it for yourself in the newspaper.'

Bill: 'You've got quite an array of facts, there, Jack, old boy. What next?'

(Concluded in the next issue)

Black Gold

Investigations indicate a definite relationship between the amount of sootfall in smoky cities and the amount of pneumonia in the areas concerned. The highest pneumonia death rates are in the area where there is the heaviest sootfall. (Morris Fishbein, M.D. in his column in the *Chicago Times*, January 4, 1947.)

Taxes—They Support What?

Part 3

By A. E. Borel, MAL

The first part of this three part article traced the beginning of taxation. It showed how at first taxation was a voluntary social donation in the collective interest. It outlined how the Price System subverted that purpose and turned taxation into a compulsory contribution. The Price System put the jingle into taxation and made it profitable for the blessed minority on top of the social dung heap.

The second part gets into the meat of the title: Taxes—They Support What? The chief beneficiary of taxes is private enterprise. This may sound illogical at first. But, read the entire article. It gives a very good analysis of the insanity of Price System operations.

The final installment of this article describes the true function of taxation. It explains why it can never be realized under the Price System and how it will be attained in the Technate of North America without money or Price. For the reader who wants to be well informed in the Body of Thought of Technocracy this three-part article is a must. Back issues are still available.

Jack: 'From what I have said, Bill, you can see that the outpourings of the tax money have gone far and wide. But, Bill, they have not gone far enough and they have not gone in the right direction! You can see that the benefits of taxation have been distributed very one-sidedly. The circle of beneficiaries of taxation must spread ever wider, and it must go to the right people. Do you see, now, what I was driving at when I first started in?'

Bill: 'Well, if you hadn't told me all you have, Jack, I might have said something like this: "What are you going to do, increase the number of people who are going to receive tax money? If you do that you will decrease the number who will pay taxes. That won't do at all. Taxes will eat us up, and we won't have any incentive(?) at all." Hasn't that been the howl right along whenever taxes were proposed to help the common people? Now I know what you mean. Here we are. We can't help the common man but we can pay our tax money as interest on bonds to support a small group which already has more

than it can use. Some goes to support a bunch of convicts in idleness while the rest of us work to pay taxes to feed them. Of course, the insane have to be taken care of, so that is one load off the poor family man. Why go on. I would like to ask, though, the reason for not putting convicts to work at really productive work?'

Jack: 'The reason for that is simple, Bill. It would interfere with the system of free enterprise. It would put a lot of goods on the market which would put some "honest citizens" out of work, thereby reducing the purchasing power. And who would get the profit? The State? That is unthinkable. Also, the cost of hundreds of thousands in idleness or at work done at a very low rate of efficiency is a juicy plum to be paid for with taxpayer's money. All you have to do is get the contract, and there it is!'

Bill: 'That looks like a good answer to me, Jack. But to go on like you asked. Here we are throwing all this money all over the place, digging ratholes to put it into if we haven't got one already made,

and all the time, right up to now, the children, the aged and the infirm have been the sole responsibility of the members of their own families, with some modifications in recent years. Two men are working side by side, on the same job, they get the same pay. One man, single, maybe married and no children, or maybe one child; the other, five, six, seven or more children. The single man, the man and wife, the man, wife and child, can do well with the pay that will naturally mean a much lower standard of living for the man with the many children. Yet society considers that the five or more children of the latter are just as much the sole responsibility of this man as the one child or lack of children are the sole responsibility or lack of responsibility of the former. So it is with the other dependents. And you figure Technocracy would solve this problem?"

Jack: 'Sure, it will solve it, Bill. I've shown you that, after all, all tax money is paid out to support people. Isn't it? Well, in a Technate each person gets support, don't they? If he is a citizen of the North American Continent, he receives an income sufficient to cover all his needs. He has his goods, clothing, shelter and social services. If he has them, you do not need to collect them in the form of taxes to pay them to him again, do you? By distributing the physical necessities of life in this manner, you actually accomplish the purpose I stated in the first place; society as a whole is taking care of those who are unable to take care of themselves. Furthermore, it is done in a more efficient and thorough manner than could ever be done under a form of money taxation where you always have the taxpayer on your

neck seeing that you don't overdo the charity.

"To put it a little more in focus, let's look at it this way. Let's divide society into three groups. Kind of analogous to the three classes that are the beneficiaries of money taxation, only different types. The first of these groups is composed of those who produce, the father act, we might say; the second, those who serve, the mother act, we might say; and the third, the dependents, the children in our story. At one time a man was a law unto himself. He could produce his own living. If he fell ill or was injured, he had to fend for himself. If he could take anything and hold it by force, it was his; otherwise, he lost. His wants were few and his means for satisfying those wants were meager. He was beholden to no one.

"Today, no one can live unto himself in our society. Life is too complex. In a scientific social system, such as that envisaged by Technocracy, there will be those who produce. They will supply the population with the physical goods of life, the food, clothing, transportation, shelter, etc. They are the Producers. Then there will be those who supply physical services. They are the doctors, dentists, teachers, policemen, soldiers, entertainers, social services, executives and leaders, and so on. Let us call them the Servors. Financial interests are not included as there are no financial interests in a Technate. Lawyers will be very limited in their vocation, as there are no property rights over which the people can quarrel.

"It is very evident that the Servors cannot furnish their own sustenance. It must be furnished them by the Producers. Likewise, the Pro-

ducers. They require more than food, clothing and shelter. To whom must they look but the Servors! These two groups, then, are mutually dependent and can interchange their efforts to the satisfaction of each. That is, they are complementary; there is nothing between them except an equal give and take.

"This is not true of the third group, the dependents; the young, the old, the infirm. They must be maintained. They require goods and services; yet they have nothing to give in return. On what fair basis and who will take care of them?

"The Producer must say to the Servor: "We, with our multiplied energy derived from oil, water, coal, the atom and the sun, are able to produce sufficient to supply ourselves and all others on this North American continent with all of the physical goods of life in abundance. We, for our part, will produce for all. You carry on with the social role you have chosen." Both roles are necessary. It requires both physical goods and physical services to build a real civilization.

"Then the Servors will say to the Producers: "Yes, without your production we would be helpless. We could not carry on. We would have to stop and raise our own food. We would have to make our own clothing, build our own homes, etc. The General Welfare would suffer. Do you produce. We for our part will perform those physical services which shall be for the General Welfare. We will train and perfect ourselves and others in those services. We shall be on the alert to discover the secrets locked in the storehouse of nature. So, working together, you producing, we serving, we shall be, together, our brothers' keeper. It shall be one for all and all for

one, without money and without price."

"Thus we shall complete the evolution of taxation from the time when all were dependent on each other down through the ages when all taxes went for the support of the chief, the priest, the king, and all that goes with it. Then we'll arrive at the final stage wherein each taxes himself by giving part of himself to his neighbor and in return receives part of his neighbor for himself. This will come about through the design of Technocracy."

Bill: "Jack, that's great. I can see it! All people do not and cannot pay taxes. But all people must receive the benefits of the taxes paid. So somebody must pay more in taxes than they can hope to get back to make up for those who pay little or nothing. In our present method of tax collection, we do it by paying more money. In a Technate we will do it by giving of our time and energy. However, he will have to put in so little more of these to pay his tax that he will hardly notice the difference."

Jack: "Yes, Bill, this will be fair and true taxation. It will be service from all that are able for the good of all, producers, servors, dependents, with profit to none. I'm glad you are signing up for Technocracy. It is the only thing to do in these troubled times. Get in and help boost the thing along, Bill. You can do no better than to join the only movement in North America which has a workable design to solve the social problems created by the impact of science and technology upon the ancient Price System. I will leave it with you. Be seeing you around Technocracy Hall, Bill. So long!"

Bill: "So long, Jack, and thanks for the information. I'll be seeing you!"

Primer of Technocracy

Prelude to the Industrial Revolution

By Henry Elsner, Jr., R.D. 8342

Look Down That Ancient Road

THE world in which we are living today is facing a crisis unique among its centuries of history. The atomic bomb has dramatized this crisis as no outpouring of written or spoken words ever could. For the first time in history, man is being forced to realize that he cannot shape his destiny by mere decisions of the mind, but is subject to a behemoth of power which he himself has created. Man now has it within his power to destroy himself by his own hand, or to have his creations be not his masters, but slaves in a new era of abundance and liberty. The problem must be faced squarely, and it must be faced now.

To fully understand the problem of today in its full implications, we shall have to study the past, not in order to find a solution, for none is to be found there, but to see how the events of today are not conundrums suddenly thrust upon an unsuspecting world but the culmination of a series of long-term trends, originating before the dawn of history itself.

Man differs from the other fauna of this planet has in one all-important respect: he has the ability to reason. Through the application of this ability he has been able to rise to dominion over the rest of the animal kingdom.

One of the first inventions probably used by man was the club. This simple device gave him a decided advantage over the other beasts of prey. He could use it as both a weapon of defense and offense; he could better defend himself and at the same time increase his ability to guarantee himself a food supply.

Progression Takes a First Step

The discovery of fire is perhaps one of the most important fundamental discoveries ever made. For this was the first use man had made of extraneous energy—energy derived from sources other than food eaten. No other animal has even been able to do this, and it is from this application of extraneous energy that our problems of today directly stem.

The domestication of plants and animals were two more important steps in man's further harnessing of energy for his own purposes. By domesticating plants, man was able to divert energy, which had hitherto been wasted, to his use in the form of food and other useful products. Animals further provided for man in two ways. First, food such as grass, which was unusable by man in its raw state, was converted into usable food in the form of meat; and secondly, animals furnished muscle power to supplement that of man.

The discovery of metals was another very important step in man's climb toward civilization. It gave him better tools and weapons, but also created a new problem. Man found that deposits of the needed metals were scattered throughout the world, with shallow deposits few and far between. As mines were necessarily made deeper and deeper, it was discovered that mining operations were severely hampered by the seepage of water into the mines. Pumping systems were devised, using human beings, and later animals, as sources of motive power. This was not enough; a new source of power had to be

found. Wind and water power had been used to some extent, but this use was necessarily localized, and not to play a very important part in this era of history

At first glance it would seem that all these advances would have tended to raise the standard of living of early man and better his daily existence. However, such was not the case. The fact is that population increased proportionally to the rate of increase of energy conversion, so that as many people lived on a given area of land as it would support. (It is to be noted here that this trend does not continue indefinitely, but eventually levels off, when a certain standard of living has been attained.)

Throughout the entire period from the dawn of history until the Industrial Revolution, the human being was the basic unit of energy conversion, supplemented by his inventions. But as yet, nothing had been invented which would *displace* human energy. Consequently, society was at first composed of only one level; everyone worked 'by the sweat of his brow' to eke out an existence.

Enter—The Price System

Gradually, as a state of equilibrium was established between man and his environment, a very small minority of people, more clever than their fellows, maneuvered themselves into positions where they did no work, but were supported by the rest of the people. These were the politicians, priests, and merchants of the times. Sometimes they ruled by brute force alone, but they soon learned that it is much more profitable to have one's rule and authority willingly accepted, than to ram it down the people's throat.

This type of society remained stable for thousands of years, and through it were founded beliefs about money, trade, property, value, morals, and

ethics which have been so firmly ingrained that they form the basis of our thinking even today. The great majority of the people had no opportunity for education of any kind, not only because such facilities did not exist, but because they were too busy working day and night to keep themselves alive and support their rulers. The ruling group always remained a small minority, for there was a limit, even back then, to the limits of social tolerance. When the burden became too great, there took place a revolution or a coup de etat with the result that one oligarchy was overthrown and another established. These conditions were able to continue because no discovery had yet been made which would displace human labor, and because population growth kept pace with improved hand-labor techniques.

At the beginning of the 17th Century events began to occur which would start the developments that would change our entire way of life and patterns of thinking. About 1600 the forests of England were becoming fewer, with consequent lessening of timber. English iron mines had depended upon charcoal for smelting processes, and with the failing of the wood supply for making charcoal, it became imperative that a method of smelting iron using another fuel be discovered.

Coal had been known and used as fuel by the poorer people for some time, but it had not been used for industrial purposes. Finally, in 1745, the method of making coke from coal was discovered, and that this coke could be used for smelting iron. Both iron and coal were plentiful in England. Thus, the more coal was mined, the more iron could be smelted; and the more iron smelted, the more iron tools to mine coal and iron ore.

The utilization of gunpowder for

industrial purposes, as blasting in mines, went hand in hand with the increased use of coal.

This increase in magnitude of operations served to intensify the old problems of mining; how to pump out the water and hoist ores out of the mines. Using human and animal labor on a large scale was not practicable, so a new method of power had to be found.

A New Period Begins

Thus was the steam engine born. Thomas Savery, in 1698, devised the first simple steam engine, and attached it to a pump for emptying water out of a coal mine. Savery's effort was crude and largely unsuccessful, and was succeeded by the inventions of Newcomen and Cawley in 1705, and James Watt in 1769. The year 1776 is notable in history for an event which was to assume far more importance than the political actions of the time; the first single acting steam engine was tried out for pumping water out of a coal mine. It worked.

One of the first industries besides mining to which the new power was

to be applied was that of textile manufacture, in which such vast changes were made that this point is generally known as the beginning of the Industrial Revolution.

This new power was soon applied to all phases of manufacturing and to transportation. New discoveries in the electrical field revolutionized communication. The age of power was soon underway.

The advent of the machine brought new problems which demanded new solutions. But these problems were not to assume their real importance until a century and a half after the March of Power had begun. At first the machine brought some degree of prosperity and raised the standard of living. It ushered in a period of vast geographical expansion. As the years passed, however, the outlook began to change. Why had the machine, with its power to free human beings from backbreaking toil, created slums and misery and unemployment for the many? Was the machine a curse instead of a blessing, or was society at fault for not adapting itself to the new age? These questions will be discussed in the next issue in 'The Culmination of the Industrial Revolution.'

Corrections of Errors

In the March-April issue No. 84 on page 33 a whole line was dropped by the printer. This omission occurred on the 7th line of the first paragraph. This made a jump from the 6th line to the 8th line. The 7th line read: 'long and about 100 miles'—. The mistake makes it read that the Ceneral Valley is 500 miles wide when the correct statement

was that it is 'around 500 miles long and about 100 miles wide.'

LEGEND FOR CHART

In the chart on page five of the same issue the symbols that identify the lines on the chart were deleted by mistake. Herewith we are reproducing the entire legend as it should have been printed in the first place.

Legend for Chart

- — — 1 square in height equals 800,000 miles of wire.
- - - 1 square in height equals 1 employee per thousand telephones.
- . . . 1 square in height equals 10,000 employees.
- - - - 1 square in height equals 200,000 telephones.
- Theoretical curve based on the growth of the number of telephones.
- 2 squares in length equals one year.

Primer of Technocracy

Government or Administration?

By Henry Elsner, Jr., R. D. 8342

Look Inside The Package

PROPERLY speaking, democracy is merely a form of government wherein the majority of the people are supposed to determine the governmental policies through their elected representatives. This method grew up in opposition to feudal oligarchies and autocracies in which a small group of men, or one man, ruled. However, due to the popular association of democracy with so many varied subjects coming under the generalized phrase 'the American Way of Life,' this definition of democracy will have to be expanded.

Let us call this expanded version of democracy 'spiritual democracy,' as contrasted with political democracy. Spiritual democracy consists of the things which many people really think of when they talk of democracy. These are 'the higher things of life,' liberty, pursuit of happiness, freedom of speech and freedom of assembly, to name but a few.

Now, what about both political and spiritual democracy in a Technate?

Political democracy is a form of political government. That statement of fact ought to be analyzed. The word 'government' is taken for granted in all discussions of political systems. But what is this thing called government? How did it originate?

Political government is a natural result of scarcity-economy operations. To simply illustrate how government may have arisen, let us take two men, Adam¹ and Adam². Adam¹ has, 'by the sweat of his brow,' acquired, let

us say, an amount of food or clothing or some other material valuable to his survival. Adam² is not able to obtain this item, due to its scarcity. He tries to steal it from Adam¹. If Adam¹ is strong, he will retain his possession; if Adam² is the stronger, he will take it from Adam¹. This was the method of existence during man's early stages.

As groups of men united in bands for protection from other men and from wild animals it became evident that dissension within the group was not conducive to the well-being of all. Therefore, they set up tribal councils to determine certain laws for them to follow in respect to property rights. Or, perhaps, the strongest man in the group assumed the position of dictator and made the laws for the entire group. These laws were arbitrary in nature, that is, they were nothing more than agreements among men to do, or not to do, certain things.

As mankind became more 'civilized' and barter grew up to evolve in turn into a system of monetary exchange, the laws and taboos of society became more in number and wider in scope in order to keep the system in balance. Here it may be noted that all political governments are nothing more than elaborate systems of cave-man society. The proof of the pudding is in the eating.

What do all of our duly elected representatives and their numerous appointees do in the process of running political governments? Obtain a list of your representatives' functions and study it thoroughly. An analysis will show one startling fact. All the duties and functions of government consist

of either modifying, controlling, or perpetuating the Price System. No government on earth was ever organized to eliminate itself. Every one, whether democratic, communistic, or fascistic, exists only to act as a referee for the preservation of the status quo.

New Times, New Methods

The possibility of abundance has changed the entire picture. In the Technate, with the abolition of money and profit, value and exchange, trade and commerce, all governmental agencies pertaining to these things will be abolished. There is no need for them. Political government will be non-existent in a technological society. Administration there must be, but political government, no. Full production and distribution are the prime functions of a Technate. There will be no special minority interests to referee.

If there is to be no political government, who will administer this new society? The answer is simple. The same type of engineers, technicians and functional people who are now operating production will continue to operate it. These are the 'general staff' of a technological society. If you can't understand this, note what confusion and uncertainty results when power lines, sewage systems, or water supplies fail. Technocracy is not trying to put any group 'in power.' It merely stands for the removal of the interference controls to correct operation of North America's technology. Minority group control, of any kind, would not be technological administration. It would be the same old Price System.

How, then, would the administration in a Technate be carried out? The plan is simple and well integrated. Each industry and service function will be organized into one continent-wide unit of operations, or Sequence. All told, there are perhaps 100 such Se-

quences. They will be inter-related for harmonious operation. The top officers of each sequence in a designated area will compose the Area Control Board of Administration. The top officers of each continent-wide Sequence compose the Continental Control Board of administration.

All officers of the Sequences will be selected exactly as they are today in industry, appointed from above. This method has been found to be the most efficient way of placing personnel. In this manner every man in a position where he must shoulder responsibility knows his job literally from 'the bottom up.' He will have been chosen by some one fully acquainted with his performance record. The individual who is incapable of administrative duties will have no desire to assume them. He could not gain social prestige or economic benefaction thereby. He would face only the prospect of embarrassing himself by his inability to perform his duties. Likewise, the appointing officer would have no desire to appoint an incompetent person to a responsible task. If he did, this would invariably show in the functioning of the Sequence and would reflect upon the ability of the officer. It is readily apparent that all ideas of political elections are not only needless but would cause intolerable confusion.

It might be added that there will be no 'concentration of power' in the hands of one individual. All appointments will be made by the officer immediately above the position to be filled, with candidates nominated from the position directly below the vacancy. The Directors of the continent-wide Sequences will select one of their number to serve as Continental Director-in-Chief. He will be the Chief Executive of the North American Technate. His term will last until death or until the regular retirement age of 45 is reached. He will be

subject to recall by a two-thirds vote of the Continental Control, and his decisions will be subject to a two-thirds veto of the Continental Control Board.

Equal But Not Identical

The fact that all theories of political government are abandoned does not mean that Technocracy thinks its social design would be a sugar-coated Utopia. While most of the causes of our present day inimical relations between individuals will be removed, Technocracy realizes that people are dissimilar and have their individual differences. For this reason, there will be one branch of the administration, the Social Relations Sequence, which will deal with relations between man and man and man and society. This Sequence, staffed by competent psychologists and persons trained to treat individual maladjustments, will have a branch in every Area Control and its Director will be on the Continental Control Board. Other functions of the Social Relations Sequence will correspond roughly to those carried out by the judiciary today. This is only a skimpy outline of the coming technological administration. There is much more to it.

Now, what about the other half of democracy' the freedoms. Freedom, like many other of our present-day concepts is purely relative. Freedom is the antitheses of suppression. Under the Price System we never had freedom from scarcity, poverty, unemployment, insecurity, ignorance, disease, inequality of opportunity, etc. These freedoms have always been suppressed. In the Technate there will be no reason for this suppression. The function of the Technate will be to produce abundance. Is it so hard for us to imagine an abundance for every one without a loss of freedoms we've never had? It seems so. This is be-

cause we are being subjected to one of the most gigantic programs of propaganda conditioning in history. The central theme of this is: 'You can have your choice, freedom or security—one or the other, but not both at the same time.' The truth is that security is freedom from the suppression of freedom.

Why should there not be freedom of religion when no one would stand to lose or gain economically by whether one belongs to one church or another or to none at all? Why should there not be freedom of expression when society as a whole, or even groups of individuals, will have nothing to fear from such expression? The Technate is designed to be flexible in operation so that new ideas may be incorporated into its structure. There would be no gain to be had from upholding the status quo as is the case today.

In a Technate freedom will be as much a part of everyone's daily life as the air he breathes. History students of the future will be amused by the emotionalistic discourses on something which they have come to accept naturally. They will smile at references to some vast all-powerful entity, a special class in itself, called 'government.'

These statements are not the result of the wishful thinking of idealists. They are the outline of a social system designed by down-to-earth scientists and engineers. This social system of abundance can be installed whenever the American People demand it. What are we waiting for? Let's unite and operate to provide an abundance of goods and services for all North Americans. By so doing, we can acquire those much desired things that men have sought vainly for elsewhere, all down through history.

Join Technocracy and help to build the New America!

In the Question Box

Be Ready To Move

By Speakers Division, 8741-1

You say Science will overthrow the superstructure of finance. It seems that the big boys of finance will have something to say about this. What *exactly* is Technocracy's plan for wiping away the Price System?

THIS question was received at a public meeting. It seems that the questioner has a lot of faith in the 'big boys of finance.' His 'faith' may even extend to the belief that the superstructure of any social system upholds its foundations, instead of vice versa. This is the kind of phony education the Price System thrives on. Then again, it may be that the questioner is merely afraid of the 'power' possessed by the 'big boys of finance.'

In either case, the big boys are not worth worrying about. Let 'em strut. When the foundations of the Price System have crumbled away enough so that the superstructure topples, the big boys on top will disappear like magic. They will fall further and hit bottom harder than anyone else, precisely because they're on top now. Their 'power' is contingent upon the continued existence of the status quo. When that goes, they go too.

The social change that is coming in North America will be unlike any previous change in history. In fact, there never has been a social change anywhere, yet. What has gone under that label in the past has been a number of transferences of political, economic and clerical control from one group to another. Underneath, the system of production and distribution of physical wealth always remained the same. The great mass of people found no change in their daily lot. The Price System, as such, was never involved in these social upheavals and revolutions.

Now, however, the Price System is involved. In fact, it's head over heels in trouble so deep that it will never come out again. The trouble the ancient Price System is in now is something it never had to contend with before. The trouble is Science and Technology. Their growth in the last few hundred years has become interwoven with the Price System of trade and commerce. Today, it is impossible to separate them. Science and Technology have created a set of physical conditions that poses insoluble problems under the Price System. Just what these consist of can be learned by joining Technocracy, and attending its Study Classes.

This information is not available anywhere else. You wouldn't expect the Price System to expose itself, would you? How could it when the only correct solution to North America's social problems involves its own abandonment. Would you like to be abandoned? So, you can quit looking elsewhere for the wrong answers and come to Technocracy for the correct one.

Science is not overthrowing the Price System. Science doesn't overthrow anything. Science is a body of organized, factual knowledge. It is something that just IS. There is no body of scientists organized for the purpose of overthrowing the Price System. Technocracy is not organized to overthrow even a hamburger stand. The worst thing that could happen to 75 percent of North America's people (death) would be for some maniacs to overthrow the Price System. The continued existence of the population of this Continent depends utterly on the continued operation of the installed

technology. Yet, it is the Price System itself that is courting disaster to all, by its failure to operate that technology correctly.

The Price System is overthrowing itself. It is committing hari-kiri. Its blind, greedy, stupidity knows no limit this side of its own extinction. Its refusal to amend or adapt its ancient institutions to modern needs is the real revolutionary force. The Price System is unable to operate technology correctly for the General Welfare by Price System methods. It can't use technological social methods and remain a Price System. So, there is an impasse. In the meantime, social problems get worse, social tension and unbalance increases. The breaking point is not far away. The danger is that the

Price System may collapse sooner than we think.

Technocracy hasn't got the ghost of a plan to wipe out the Price System. But, it has a beautifully worked out scientific design of social operations to take the place of that Price System when it wipes itself off the face of this Continent. We must be ready for that happy day, so as to stall off chaos. That is the work Technocracy is doing. It is the most important job on this Continent for this generation. Why not quit worrying about the 'big boys of finance' and get active for the hundred-odd million regular people in America! The 'big boys' are eliminating themselves. Let's make sure they do a permanent job of it by being ready to move into the *Technate of North America*. Catch on?

Correction of Errors

Great Lakes Technocrat has made three mistakes recently that it knows of. Herewith, we wish to correct them.

1. In Volume III, Number 12, September - October, 1946, it is stated that 'a good man and three good horses can plow about 10 acres a day.' The figure should have read 3 acres a day.
2. In the same issue, on page 33, it is stated that about 4,000,000 G.I.'s are going to school under the G.I. Education Plan. We took the word of a top Veteran's Organization official on that. No official census has yet been released on this, but recent estimates indicate the figure runs around 1,000,000.
3. In the November - December issue a regrettable printer's mistake occurred. The credit line

was omitted from the picture on page 25. The picture was reproduced from a cartoon by Vaughn Shoemaker in the *Chicago Daily News*, May 24, 1946. *Great Lakes Technocrat* is glad to give credit for this picture.

The Myth of Race

'America, which never knew feudalism, has established another hierarchy—a racial one.

'The English, Scotch and Irish are the aristocracy. After them come Scandinavians and Germans, and then the French and Slavs. The Italians are many times lower. The Jews are even lower. Puerto Ricans are below them and the last at the bottom of the ladder are the Negroes.' (From an article by Ilya Ehrenburg in *Izvestia*, as quoted in the *Chicago Daily News*, July 24, 1946.)

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933.

Of GREAT LAKES TECHNOCRAT, published bi-monthly at Chicago, Illinois, for October 1, 1946.
STATE OF ILLINOIS } ss.
COUNTY OF COOK }

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared R. B. Langan, who having been duly sworn according to law, deposes and says that he is the Editor of the GREAT LAKES TECHNOCRAT, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse side of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher--Section 1, R. D. 8741 Technocracy Inc., 3178 N. Clark St., Chicago 14, Illinois.

Editor--R. B. Langan, 3178 N. Clark St., Chicago 14, Illinois.

Business Managers--None.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Section 1, R. D. 8741 Technocracy Inc., 3178 N. Clark St., Chicago 14, Illinois, which is a chartered unit of Technocracy Inc., Continental Headquarters at 155 E. 44th Street, New York 17, New York, a non-profit, membership, educational organization, with no stock or stockholders. The Officers of Section 1, R. D., are: O. Floyd, Director; Lilly Yngve, Secretary; John Beverleigh, Chief of Staff; E. Nelson, Treasurer all with addresses at 3178 N. Clark St., Chicago 14, Illinois.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)
None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant had no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

ROBERT B. LANGAN.

Sworn to and subscribed before me this 26th day of September, 1946.

JOHN G. FRIENDLEE.
Notary Public.

(My commission expires March 9, 1950.)

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Primer of Technocracy

What About Incentive?

By Henry Elsner, Jr., R.D. 8342

No Ifs, Buts or Perhapses

Of the many arguments raised against the program of a technologically administered society, perhaps the most common is the blunt statement: 'It won't work.' When pressed further, the individual making this statement will reply that 'human nature is agin' it.' 'Why, if everyone got the same income, no one would want to work to get ahead. There wouldn't be any incentive.' These objections on work and incentive are the result of Price System conditioning. However, because Technocracy's approach is a design of function, it is important that they be satisfactorily answered.

First, let us define 'incentive.' It is a driving force or spur to action. Man has another characteristic that is often mistaken for incentive. That is initiative. This looks like incentive but it is different. Initiative is the power of commencing or originating action. Thus, incentive is an external force. Initiative is internal. Most people can carry on under a strong incentive. Not so many operate on the basis of initiative.

Man is by nature an energetic creature. If this were not so, he would not occupy the position of dominance over the rest of the world's living beings. Man must continually be *doing* something to be satisfied. Every normal, healthy individual spends his time in some manner other than sitting with folded hands and a blank look on his face. Initiative and incentive alternately stir and prod him to activity.

Now, let's define work. Work is 'the application of force to a body causing it to move.' Thus, accurately

speaking, practically all activities are 'work' of one kind or another. But when work is discussed by 'the man on the street,' he is thinking of an entirely different concept. The difficulty he encounters when thinking about work in a society where working hours would be very short and incomes equal is his Price System concept of work.

We think of 'work' and 'leisure' as both meaning activity but activity of two very different types. 'Work' is regarded as something unpleasant, an obnoxious task that just *has* to be done, or as something tedious and boring but necessary. 'Leisure' on the other hand is thought of as the opposite condition of 'work.' It is a status much to be desired. These concepts originated in the by-gone era of human-labor, hand-tool production when the vast majority of people were forced to work at backbreaking tasks from dawn until dusk. Relief from toil, that is, leisure, was the privilege of a very select upper caste. The introduction of technological means of production has changed the entire scene until now the line of distinction between 'work' and 'leisure' is becoming quite thin.

In a technological society, the distinction between work and leisure would, for all practical purposes, cease to exist. Working hours would be so short, and conditions so agreeable, that the necessary 'work' to keep the needs of society supplied would be as pleasant as any form of 'leisure.' One's income would be independent of the type of work one would do. So, each individual would be free to choose the occupation in which he is most inter-

ested, and for which his individual talents would be the best suited. Under such conditions there can be no doubt but that the great majority of people would be only too willing to do their share of operating the Continent. Any one who, for any reason, refused to work would have his head examined by competent psychiatrists.

He Who Can Needs a Chance

'Well, I'll concede that everyone would work,' says our critic, 'but would they work as well as they do today? What incentive would there be for one to advance himself, or make new discoveries, invent new devices? Wouldn't the country soon stagnate?'

Why does anyone do a job well, today? Because he receives more pay for so doing? The monetary benefactions derived from doing a job better than the next fellow, or discovering something new do have some influence. There are many other incentives equally as great or greater. Also, there is initiative. Do we not often do something as well as we can, although we receive no more money than if we had done the job in a mediocre manner? How about the inventor who works years on an idea with little or no cash rewards? Is that incentive or initiative? Also, don't forget the thousands of professional people who are relatively poorly paid, but whose work requires much training and patience.

One of the chief reasons people do anything well is because of pride in their accomplishments. This is the reason we work so energetically at crafts and hobbies. Everyone likes to see a job well done. Everyone likes to do something better than the other fellow. Is all this incentive or initiative?

The same factors apply to the ad-

vancement of an individual to a more responsible, or more difficult, position. Some people are born leaders, or administrators, and some are not. With the stimulus of economic bribery (incentive) removed, only those with initiative, who are capable of performing difficult tasks, will attempt them. There has always been a certain amount of social prestige connected with the holding of a difficult or responsible position. In a Technate, this prestige will depend upon functional ability alone, not on display of monetary wealth. This does not mean, however, that certain positions will be 'looked down upon.' The idea of looking down upon some one or group has arisen from economic differentiation in incomes.

Technocracy does not pretend that the Technate will create a 'classless society.' Nor does it promise to eradicate all the eccentricities of human behaviour. Technocracy does point out how on the North American Continent a higher standard of living than we have ever known can be had for all of our citizens. As a result, most of the old economic stigmas will be removed. They will be replaced, not by apathy and inertia, but by a far more healthful and vigorous life all around.

The inherent initiative of so many people which is squelched under the Price System will be released. There will also be a strong incentive to stand well in the eyes of our fellow men. Thus initiative and incentive will both be permitted to function in a socially desirable way for the first time. You must admit this has the Price System beat by a mile. Why not join Technocracy and learn more about it?

There were 42,893 fires in Chicago in 1946.

Primer of Technocracy

Culmination of The Industrial Revolution

By Henry Elsner, Jr., R.D. 8342

'When In The Course'

The Industrial Revolution formed the cornerstone of modern society. If the events precipitating it had not occurred, we would today be without most of the conveniences and necessities which we take for granted. Life would have remained at the static level of thousands of years ago. But while this Industrial Revolution has brought material benefits hitherto un-
...ned of, it has also introduced a disquieting note into our social life, which, as the years have gone by, has risen in crescendo. The last great depression and World War II were but two of the more obvious products of the factors which are 'upsetting the appplecart' of our living and thinking.

In determining the causes and analyzing the effects of these conditions, we will deal primarily with the North American Continent. This is because we live here and are naturally more concerned with problems close at home, and also because certain physical factors have put America in the forefront of social change. The foremost of these factors is the fact that the North American Continent has approximately 54 percent of the world's total known energy and mineral resources. We have 19 percent of the world's land area, with only 9 percent of the total population. Europe and Asia, due to the natural scarcity of many of the resources upon which modern technology depends, plus a larger population than may readily be supported, obviously could not, in the same period of time, reach the same state of technical progress as that of North America. The Indus-

trial Revolution is here at the point of culmination. Kilowatt hours have replaced man-hours of labor as nowhere else in the world. Today only about 2 percent of our labor is manual, the other 98 percent being mechanical. Conversion of energy is at such a level that every man, woman and child has the equivalent of several dozen slaves working for him day and night.

These are some of the physical changes which the transition from hand-tool to power production has wrought. What are the changes in our society? A study of our economic and administrative systems will reveal that they are essentially the same as those in effect before the Industrial Revolution. Oh, yes, the outward appearances have changed, the ideologies have changed, and the groups in power have changed; but if one makes an honest analysis of *operating characteristics*, he will find that they have changed little. Our whole social system has been built on an economy of scarcity. All of the 'different' political and economic systems from 'capitalism' to 'communism' had their origin in the days before the Industrial Revolution, or when it was in its early stages. Power production and modern technology have, for the first time in human history, made possible an economy of abundance here in North America. It is obvious that there must come an inevitable conflict between these diametrically opposed conditions.

Physical History of America

It has been said that statistics are dry, which is correct, but these same

statistics can be illustrated in the form of graphs, which sharply reveal important trends. If we take the statistics of the growth and operation of our industries since the country's founding, plot graphs from them, and then combine these graphs, we have a concise picture of American Industrial operations. A study of such a graph shows some very important trends. First, it is seen that the rate of extraneous energy conversion is constantly increasing. We see that total production has also increased proportionally. Another curve, representing man-hours per unit, that is, the length of time and number of men required to make a unit of anything, has declined. The line representing total employment rises until a peak is reached about the year 1921, and then steadily declines until the beginning of the Second World War. If we take the curves of extraneous energy conversion and production, and instead of the average curve used to compute totals, use one conforming strictly to periodic conditions, a very interesting state of affairs may be noted. Production zooms upward for a time, and then dips sharply, only to once more climb higher than before; which, in turn, is followed by another low dip. Each of these dips from the average curve is about 30 percent greater than the one previous, with each dip occurring closer to the next one than the preceding one was to itself.

What does this array of facts and figures mean in relation to our society? From the purely physical standpoint, this means that we have a growing capacity for the production of an abundance, and that less time and human labor is needed in this production—which should create more leisure time. Couple this with the production of plenty for all, and it would seem that the outlook is rosy

indeed. But here is where our economic system, which, as previously mentioned, was originated in conditions of natural scarcity, enters the picture. We have noted the dips in the curve of total operation. What caused them?

Expand or Die

As industrial plant capacity rapidly expanded, a point was reached when consumption no longer equaled production. Then the shops closed down. The reasons for this are many, but one of the chief causes is that the markets became 'flooded'—too much was produced for the men producing it to buy it back. Added to this is the factor of decreasing man-hours per unit, brought about by improved methods, and increasing mechanization, which, under our economic set-up, means unemployment.

In the past, these shutdowns were only temporary, as there were then several ways of alleviating their causes. One of the chief of these was further expansion. The industries opened new branches 'out west' employing more men, or new industries were started, putting more money into circulation. Or exports to foreign countries were increased. But, as the magnitude of operations increased, these shutdowns became progressively more severe, and closer together. Our frontiers were eventually closed, and the limit to new industries was becoming apparent. Also, improvements in existing industries meant only the shutdown of the more obsolete factories.

Thus did the debacle known as 'the great depression' occur. After World War I, business was stimulated by the scarcity rising from wartime conditions, and after a minor shutdown in 1921, such furious expansion was started that it was evident years before the crash that the limits must soon be reached. The

stock market crash was due largely to much greater expansion on paper (stocks and bonds) than could be accomplished in reality. When the limit was reached, everything started to collapse at once. When a depression is started, it becomes a downward spiral, increasing constantly in momentum. Millions were unemployed and needy in the midst of abundance.

With the New Deal, the last desperate measure to preserve and revive the distribution system were tried. 'Pump priming' through the NRA, government subsidies, public works projects, and the dole, was an attempt to redistribute the purchasing power so that goods might be bought and production once again commenced. At best, the plan was only a palliative, and not a cure. The 'recession' of 1937-38 bore this out. Production had risen to the 1929 level, yet there were still millions unemployed.

It took another war to finally lift America out of the depression. In wartime, everyone is employed producing war materiel which is destroyed, thus maintaining a perpetual scarcity. During this time, adequate civilian goods are not produced, which also creates a scarcity. It is this scarcity which enables our present full employment to be maintained.

Just Around The Corner

The war is over now, and we are striving to return to 'normal.' We observe about us shortages, inflation, strikes and confusion in general. These conditions are not signs of a healthy economy. Many observers foresee another depression in the near future. The recent, and still continuing, events in the stock market seem to bear this out. When one studies the signposts of today, he is able to see that it is only a matter of time before another 'boom and bust'—or will we have a bust before a boom!

The problem facing us today is primarily one of distribution. The problem of producing an abundance for everyone has already been conquered. The paradox of 'poverty in the midst of plenty' is not insoluble. Surely we who have solved the problem with which the rest of the world is still struggling are able to accomplish this, solution of the problem of distribution.

The next depression will be the last depression! This economic and social system is doomed to go, not because it is so desired by a group or groups of people, but because it is outmoded. The change-over from an economy of scarcity to one of abundance will require changing a lot of ideologies ingrained for the past few centuries. This is not as hard as it seems, for did we not discard the horse and buggy in favor of the automobile? Whether we like it or not, we must face the fact that we must institute a new system of distribution and administration which is in accord with the technical age in which we live. The only alternative is to plunge North America into Dark Ages blacker than those Europe has ever known.

Straw in the Wind

Dun and Bradstreet reports that the number of business failures which was at a record low during the war has been rising steadily. 'Manufacturing failures outnumbered wholesaling and retailing failures in 1946 the first time in American business history and the trend has continued into 1947. In January and February 159 insolvencies were reported.' *Chicago Tribune*, May 4, 1947.)

'The steel industry uses two billion gallons of fuel oil annually to heat its furnaces.' (*Steel Facts*, February, 1947.)

Technology Marches On

Productivity Changes Since 1939

Part 2

By Research Division, 8741-1

In the first part of this article, published in the May-June issue, the increase in productivity in manufacturing between 1939-1945 was outlined. This part deals with the nonmanufacturing industries such as mining, railroad transportation, electric utilities and agriculture. All of the data cited are taken from the MONTHLY LABOR REVIEW for December 1946, unless otherwise indicated.

Productivity in nonmanufacturing

Wartime restriction on new equipment installations and shortages of materials and manpower had their effect to a greater or lesser extent in all industries. This condition aggravated operating problems and tended to slow down the steady increase in productivity.

This was especially true in those industries producing goods and services not directly essential to the war effort. For instance, in the clay construction products industry production dropped 3 percent between 1941 and 1945 and output per man-hour declined 16 percent. Productivity also declined in the cement industry. In general, in those industries where total production declined because of wartime restrictions, the output per man-hour also dropped.

On the other hand, nonmanufacturing activities in direct support of the war effort report a sharp rise in productivity. The Bureau of Labor Statistics reports that: 'Special efforts were made to supply these industries with needed equipment and to keep them adequately staffed.' Among them are mining, railroad transportation, electric utilities and agriculture.

Mining Industry

In the major mining industries output per man-hour doubled between

1919 and 1939. This resulted from the growth of mechanization and improved equipment. In soft coal mining 60 percent of the underground production was cut by machines in 1919 and 91 percent in 1945. The use of mechanical loading rose from one percent of production in 1925 to 57 percent in 1945 according to a report of the National Coal Association in *Mechanization*, January 1947.

The BLS states: 'Strip mining which is far more efficient than underground mining with respect to man-hour requirements per ton, contributed little more than one percent of the total coal tonnage in 1919, but almost 10 percent in 1939. A release of the Bureau of mines, dated March 15, 1947, reports that in 1945 coal production by strip mines was 19 percent of the national total. The overall increase in output per man-hour in soft coal mining between 1919 and 1945 amounted to 20 percent.

Metal Mining

Productivity also rose in metal mining. More extensive mining was done by the open-cut method. Belt conveyors and larger capacity trucks were installed. In underground metal mines new drilling rigs and ore handling devices were installed. Special efforts were made to maintain an ade-

Primer of Technocracy

Full Production Demands Full Distribution

By Henry Elsner, Jr. R.D. 8342

An examination of the contemporary economic scene will point out that the basic problem underlying the confusion here in North America is not full production but full distribution. It has been demonstrated how the present economic system of monetary exchange is unable to distribute the products of modern technological production. What alternatives have we, the American people, to choose from?

Today there is a remarkable tendency among politicians and other sophists of the social 'sciences' to orate learnedly about two awe-inspiring somethings called 'capitalism' and 'communism.' It is not our purpose here to go into the intricacies of exact definition, so let it suffice to say that capitalism is the system of exchange now existing on this Continent. Communism is supposed to be capitalism's opposite; and it is presented as the only alternative to capitalism. The intellectual radicals, as well as the out-and-out communists tell us that the time has arrived, as predicted by Karl Marx, when the capitalist system would destroy itself. Therefore, the workers of the world must unite to overthrow this decadent bourgeois regime, and establish a dictatorship of the proletariat.

Let us examine the actual operating characteristics of communism, if we can dig them out from beneath the morass of emotional nonsense. The similarities between the so-called 'revolutionary ideas' of the Marxists and capitalism are indeed astonishing to those who have been conditioned in the 'either-or' method of thinking.

First of all, communism retains the

use of a medium of exchange, thus necessarily keeping all the allied, hoary concepts of trade, value, property, etc. Second, communism retains the use of a political system for administering its affairs. It may be noted here that many communists, when approached regarding the dictatorial party oligarchy rule in Russia, say: 'Oh, it won't be that way here.' But, they are very vague about what it will be like here if their system comes into effect. America's high energy civilization demands a plan of social organization as exact as our most precise technological devices. Yet, the communists propose to run this Continent on exactly the same basis as that of today, with some modifications as determined by a certain German philosopher who lived in the 19th Century. In conclusion, we may say that the one real difference between the systems of communism and capitalism is the fact that different groups of people control the economic rackets. Communism, then, offers no solution to America's problems.

Network of Compulsions

And what about fascism? Of course, Americans would never accept fascism under its own name (so we are told) but it is doubtful if fascism would be known as such if it were established. Huey Long said that when, and if, fascism comes to America it will be called Americanism. Remember 'National Socialism?'

What is fascism anyway? Technocracy has defined it as: 'The consolidation of all the minor rackets into one major monopoly for the preservation of the status quo.' This means that fascism is an effort to preserve

a disintegrating economic system by force. The social mechanism used by fascism is the corporate state wherein total authority is vested in the triple oligarchy of private enterprise, ecclesiasticism and the political government.

However, it is impossible to hold any society in a static state for any length of time after technology has entered the picture. The mandate of technology to the Price System is 'expand or die.' That's what is the matter with the Price System now. It is trying to expand to keep from dying. However, its efforts are futile. Like the bullfrog in Aesop's fable who tried to blow himself up to be as big as an elephant it will burst in the process. If laissez faire capitalism can not expand beyond its natural peak of growth how can fascism expand?

The only answer is violence and war. A fascist regime must resort to these devices. If social violence occurs in North America it could easily obliterate the delicately-balanced technology upon which we all depend. In that event many millions of Americans would no longer need to think about social problems. They would be dead. Fascism certainly is no solution to the problem of distribution.

Technocracy Is The Answer

All of the economic systems of today are incapable of handling the problem of distribution, for they are all basically the same. Their operating characteristics are derived from the pre-technological era of natural scarcity. All of these systems are correctly defined as Price Systems. 'A Price System is any social system whatsoever that effects its distribution of goods and services by a system of trade or commerce based on commodity evaluation effected by means of debt tokens, or money, irrespective of whether the ownership involved is individual or collective.'

Is there, then, no solution to our problems? Happily, this is not the case. The same science and technology which has perfected full production can effect full distribution. This is a generalized statement, so we will now be more specific.

In 1919 a research organization composed of engineers and scientists was formed with the purpose of studying the effects of technology upon our social structure. This organization was called the Technical Alliance of North America. In 1930 it became known as Technocracy and in 1933 was incorporated under that name with Howard Scott as Director-in-Chief. The scientists and engineers of Technocracy approached the social problem with an entirely different point of view from that of the politicians and philosophers. These men found that the North American Continent was able to produce plenty for all; that our Price System was incapable of distributing this production; and that a new method of distribution must be designed.

The concepts of value and exchange are relics of an era of scarcity. To have a value, or high price, an item must be scarce. Abundance abolishes value. Examples of this may be found every day in the world around us. When items are scarce, one thing is exchanged for another on a basis of their value. An abundance demands that everything be distributed as widely as possible.

Distribution of an abundance requires precise designing. Technically, it is possible to produce enough so that we could just give away products to everyone. But, it is self evident that such an anarchic method would result in nothing short of chaos. Therefore a system of simple, accurate and rapid accounting must be devised.

The most exact and stable method

of measurement of goods is the amount of energy contained in the item, or required to produce it. Energy measurements do not fluctuate as prices do. Moreover, energy is the one common denominator among all living and non-living things.

This Way To The New America

In the distribution system designed by Technocracy, the total amount of energy degraded in a given period of time would be calculated. The energy cost of the necessary free services are then deducted, such as, police and fire protection, local transportation, education, health, etc. The remainder of available energy is then allotted equally among the population.

Some may object to the equal distribution of energy units. However, differentiation of incomes would only result in needless confusion and tend to unbalance the smooth functioning of the system. Besides, there is no point in giving some people a lower income when there is more than enough for all. The concept of differentiation of incomes is a hangover from the era of natural scarcity when a high standard of living for the few and a low standard of living for the many was the *modus operandi*.

Technology demands a high standard of living for all if it is to function properly. In a Technate incomes would be equal but not identical. This means that it would not be a commissary system wherein goods and services would be doled out on an equal basis. Each person could spend his energy units in his own way.

Units of purchasing power would be represented by Energy Certificates, issued to the individual citizen from time to time. These would be worth nothing in themselves, but would be merely parts of an accounting system.

They would be non-negotiable, non-interest bearing, non-transferable and have a time limit for use. They could not be stolen, given away, or gambled with. No power on earth could take them away from a citizen except, possibly, he himself by violating the laws of the land.

When one wanted to 'purchase' something he would surrender the required amount in certificates. The certificates would then be put through a machine which would mark thereon, in code, the energy cost of the item and other pertinent data. Once a day the used certificates would be scanned by a photoelectric machine and the collective data sent to a central accounting office. In this manner a constant check could be kept on what was being distributed and, therefore, how much need be produced to take its place.

This is the only method yet devised for distributing an abundance. It is peculiarly suited for application, first on the North American Continent, and is not intended as a cure-all for other nations of the world.

It is in the hands of the North American people to see that a technological system of distribution is installed now. Day by day the plight of the Price System becomes more acute. The communist and fascist may scream out their emotional panaceas, but their ideologies can not feed, clothe, and house the people. Technology can do this handsomely and provide all the other items of a high civilization also including equal opportunity to all citizens and complete security from birth to death.

Technocracy calls upon every North American to investigate its program and then to help educate our people for the era of abundance that lies before us.

Technology Marches On!

Audacious, Always Audacious

By Research Division, 8741-1

Metallurgy

A method has been developed to increase pig iron production up to 20 percent, with no increase in man-hours of labor, a reduction of the amount of coke necessary, by about 10 percent, and very little addition to existing facilities. Believe it or not, it's done with hot air; and that's no hot air.

Pig iron is made in a blast furnace. Into the top is dumped iron ore, limestone, and coke for fuel. To assist and intensify combustion, a blast of hot air is injected at the bottom. The new method just uses more air than formerly. Normally, blast furnace air pressures are maintained at about 20 lb. per square inch, and total air volume runs about 75,000 cubic feet a minute. The new technique uses pressures up to 30 lbs. per square inch and air volume up to 110,000 cubic feet a minute.

The Republic Steel Corporation has been experimenting with the new method. Under standard conditions, one of their furnaces produced 1,169 tons of pig iron a day with a coke consumption of 1,746 pounds per ton of iron produced. With the same blast furnace, but using the new method, production was increased to 1,435 tons a day with a drop in coke consumption per ton of iron to 1,494 pounds. The quality of iron produced by the new method is said to be higher and more uniform.

The *Wall Street Journal*, May 22, 1947, reports that a major obstacle to the use of heavy blasts of air has been that the high velocity drove fine iron ore, coke and limestone out of

the top of the furnace. Republic has overcome this by what are called 'comparatively minor' structural changes in the furnace top. *Business Week*, May 24, 1947, reports that the new method opens the way to the use of low grade iron ore. At present these ores cannot be used without being agglomerated, i. e., compacted into chunks.

Rollerless Grain Mill

A revolutionary new process for making flour without grinding or sifting has been developed in the laboratory stage by the Midwest Research Institute of Kansas City. A pilot plant is being built at the Institute to permit commercial tests. *Business Week*, May 10, 1947, reports that:

Wheat (or other grain) is placed in a metal cylinder. An air compressor puts the grain under pressure, and compressed air fills the tiny pockets in the grain. A valve is turned and the wheat shoots out through a small nozzle. This releases the pressure of the air within the grain instantaneously, and the kernels are blasted apart. (This process is called "explosive dissociation.")

The Christian Science Monitor, June 17, 1947, reports that:

According to Harld Vagtborg, President of the Institute, the significance of the experiments lies in the fact that preferential separation of the component parts of the grain berry can be obtained. Wheat flour can be made free of the germ, something exceedingly difficult under conventional milling methods. Too much germ in flour produces a tendency to spoil.

In order to supplant present methods,

From Here on Out

Keep Your Eye On The Trends

by R. F. Novalis

Increasing Trends..	All-Time LOW	Latest HIGH Figures*
1. DEBT (U. S. Govt.) per person.....	January 1, 1840 \$0.21	1,960 Dollars
2. ENFORCED LEISURE (unemployment.....)	October 1944—630,000	2,530,000 People
3. MACHINE TOOLS in use** (cumulative total).....	1925.....700,000	1,823,800 Machines
4. BANK LIQUIDITY (percent deposits to reserves, Federal Reserve Banks).....	1921.....60.0%	98%
5. GOVT. (U. S.) BONDS to total bank invest- ments (Federal Reserve Banks).....	1929.....39.0%	93½%
6. GOVT. (U. S.) BONDS to total life insurance investments	1915.....0.005%	64%

Decreasing Trends	All-Time HIGH	Latest LOW Figures*
1. PRODUCTION (combined factory-mine-railroad freight) Index basis 1919-20 monthly aver- ages equal 100	Oct.-Nov. 1943—250	139.
2. MAN-HOURS WORKED (total of man-hours in factory-mine-railroad) (Note: 1919-20 month- ly average was 2.54 billion) Actual number.....	Oct.-Nov. 1943 3.14 billion	2.27 billion
3. MAN-HOURS PER UNIT in above industries, combined average	1919-20 = 100	44
4. ENFORCED SCARCITY (load factor on installed capacity of above industries)	No Figures	18%
5. INTEREST RATES (combined average yield on Govt.-municipal-corporate bonds)	1919-20 6.12%	1.70%
6. OSCILLATION DOWNWARD of factory output since all-time peak (Oct.-Nov. 1943).....		35%

*March-April, 1946 1946, Two-month Average.

** No figures available on number of machine tools scrapped

Ed. Note: See January-February "Great Lakes Technocrat" for detailed explanation of this table

Full Employment on Paper

Only about half of the approximately 12,000,000 returned veterans have been absorbed into industry. About 2,000,000 are in the "52-20 Club," that is, they are drawing \$20 a week for 52 weeks as non-working veterans. About 4,000,000 are going to school under the G. I. Education plan. These 6,000,000 persons are not counted in the unemployed army. That's why we have only 3,000,000 listed as unemployed now. Figure it out for yourself. Are these 6,000,000 producing? Then add 6,000,000 and 3,000,000 and see what you get. It's a swell start for

the last and final depression (we hope) that good old 'free enterprise' will ever be permitted to impose upon America.

There were 160 mechanical sugar beet harvesters at work in California in 1945. The number will reach 360 in 1946. 'Three man-hours with one of these machines will do the work of 45 man-hours with hand labor.' (*Wall Street Journal*, April 2. 1946.)

Primer of Technocracy

Let There Be—Scarcity

By Louis Verhovic, 8141-15

'Over The Bounding Main'

OUR ancestors came here with the languages, customs, folklore, politics and economics of a time-troubled European Continent. They brought over the age-old concepts and precepts that had been accumulated through an aeon of gradual development. Through thousands of years, while Europe fought and plundered, one nation against another, man progressed constantly but slowly in his struggle for existence and advancement against a stubborn environment. His greatest threat to his existence was his ignorance of the factors that were involved in his very existence. The discovery of coal was one example of advancing human society toward a greater ultimate. His constant goal was, for security. His constant search was for silks, spices, minerals, fuels, or food which a low energy civilization required to replenish a constant scarcity.

According to our historians, Great Eras lived and flourished. They love to tell and retell of the 'Glory that was Greece,' etc. At the height of all these 'glories' and 'grandeurs' there was not even one mechanism as complicated as today's simplest sewing machine, fountain pen or cigarette lighter. The sweeping legions of Attila the Hun or Genghis Khan could easily have been wiped out by a single regiment of modern mechanized cavalry. All the land and gold, stolen by the great Khan, or all the territory conquered by the Little Corporal could not gain for either of them the simplest reciprocating engine. The

greatness of past civilizations exists only in the minds of men.

Today, there is a real greatness potential in American civilization. Science, technology and energy have advanced mankind far beyond the hand tools of centuries of agrarian development. They have conceived a civilization of riches, power and culture far beyond the greatest attainments of the past. Past empires were built upon millions of slaves, sometimes called peasants and sometimes referred to as chattels. They were born and raised, fought and died for the greater glory and aggrandizement of their Aristocracy. Poets, bards and historians wrote much about the aristocrats but little about the slaves. Advancement continued, however, with peoples everywhere subconsciously resenting the limitations which the scarcity-controlled economies of the world inflicted upon their existence. In constant endeavor for an ever larger share of wealth, individuals kept striving for and seeking new fields of exploitation. They tried to find a way out.

The Course of Empire

And so it came about that America was discovered; not because of its political or democratic potential, but as an expression of man's greed and need. Columbus may have been convinced that the earth was round, but he did not sail the uncharted ocean to prove his contention. He was in search of a westerly route to the Indies. There he could find wealth in spices, jewels, gold, silks and the like.

Instead, he discovered America. What a bitter disappointment to have discovered a Continent that was rich in timber, oils, minerals and food, instead of a Continent where gold could be plucked off trees like apples! The archives of Spain collected dust on the records of Columbus' discovery since it was of no practical importance then.

The succeeding groups of people that settled and pioneered this Continent bore living evidence that the most important consideration America could grant its trespassers was to supply them with its limitless hoard of resources. People who settled the land gorged themselves with the wealth of the Continent, robbing nature and their fellow man to attain a greater share of that Continent's wealth. The more astute and ruthless hogged control. Man carried on with his age-old concepts of wealth in terms of gold; power in terms of slaves. A few centuries passed. The Industrial Revolution came. Technology developed. The Civil War came, and a great hullabaloo was made about freeing the slaves. Technology developed some more. The Frontier was opened, settled, and closed. The Twentieth Century dawned, and North America found itself, all unwittingly, in the Age of Power.

The same type of people, with the same ideas and concepts, find themselves in control of a huge machine. Many of them don't realize that the change has occurred. They take it for granted, as the change was rather unnoticeable. The Age of Power has crept up on us within the period of our own lifetime. Compare it for yourself. From the stone age on down to the Revolutionary War, man's greatest mass production ability to kill off his fellow-man in time

of war was probably with the use of the catapult or with burning oil. Very few could be incapacitated by the use of these primitive weapons. At the time of the Revolutionary War, gunpowder was used but the weapons were very inefficient. The machine gun and the trench mortar were unheard of. Man's conquest of technology and energy was yet to come to its prime. An accelerated tempo was reached as science learned how to harness energy and develop new technology. An era of development passed in America, and we discovered the powers of jet propulsion, rockets, atomic energy, etc.

'Abundance Haunts Me'

Philosophers of all the ages have dreamed, have spoken of, and written of a Utopian world of abundance. This, although an excellent method of idling away time, was based upon nothing more stable than wishful thinking. Until technology was used, it was impossible to have a high standard of living for a large number of human beings. This is due to the fact that without the use of extraneous energy it is impossible for humans to step up the time rate of doing work beyond the capacity of the human engine. Consequently, in a low-energy state, there cannot be anything but a low standard of living for the bulk of the population. The use of extraneous energy and technology have granted us the potential abundance with which we are now faced. Paradoxically, however, the only thing we can do with abundance under the Price System is to destroy it.

For thousands of years in scarcity economies, people have starved to death. It is one of the payments nature extracts when a low-energy converting nation attempts to maintain

an excessively large population. People have starved, and people will starve, as long as and wherever there is scarcity, whether it is natural or artificially enforced.

In the attempt to sabotage our own destiny (an abundant New America), our political leaders are giving away the productive results of our technology. Technocracy does not object to helping other peoples. It points out that it is national sabotage to give away our national heritage in order to maintain a Price System which enforces artificial scarcity at home.

Our ancestors brought with them concepts of price and values, and instituted a scarcity designed economic system. Americans, however, are responsible for making America a nation of potential abundance, such abundance as old-world philosophers never even dreamed of. Yet to maintain the old outmoded Price System,

Americans are being penalized. The potential greatness of this Continent and the abundance inherent therein cannot be achieved as long as we continue to operate under this scarcity enforced Price System.

A host of misfortunes only lie in store for us if scarcity is maintained. All of these myriad of misfortunes could be avoided by the application of science and technology to production and distribution. This is the proposal of Technocracy, backed up with a design of operating such a culture of abundance.

The uninterrupted application of science and technology to production and distribution will achieve the *real* greatness potential in American civilization. This is not for the glory of future historians, but for our own present, individual, and collective, General Welfare.

American Story

Robert Fulton did not invent the steamboat and John Ericsson did not invent the screw propeller. Both were invented and successfully used by John Fitch, the steamboat 20 years before Fulton and the screw propeller almost 50 years before Ericsson. John Fitch was born at East Windsor, Conn., January 21, 1743. He manufactured arms during the Revolutionary War. In 1786 he built a steamboat that ran eight miles an hour. In 1788 a company was organized. He built a steamboat for it that ran on the Delaware River for two years. Fitch built five steamboats, one with a screw propeller. His company failed; he could not raise any more capital; his work was ridiculed. Discouraged at the age of 55, he died penniless in Bardstown, Kentucky, July 2, 1798.

In the last quarter of 1945 there were 121 corporation mergers wherein small firms were absorbed by larger ones. This is the largest number of mergers in any quarter since 1931. In the first quarter of 1946 the number of mergers declined, due to seasonal reasons, but still was a third higher than in the first quarter of 1945. The trend is most pronounced in drugs and pharmaceuticals, textiles, metal producing and fabricating, alcoholic distilling, dairying and paper mills. (From a statement by Secretary of Commerce, Wallace, in the *Chicago Sun*, June 26, 1946)

There have been 35,800,000 tons of steel exported off the Continent in the last five years. (*Steel Facts*, June 1946).

Primer of Technocracy

The Engineers' Full Production Program

By George Moody Wolfe, 12247-7

How Full Production Is Now Prevented

When people want goods and are able to buy, then the more plentiful the goods are, the lower prices they bring.

Whenever goods are produced to be sold for profit, *abundance must be prevented*. If all goods were abundant, like air and in many places water, then nothing could be sold for any price. So, of course, profits would not be possible.

Producers and dealers for profit MUST try to keep the selling prices of their goods high enough and the costs, which include the wages of their employees, low enough to make profits. If prices are too high or wages too low, many consumers are unable to buy enough goods. If prices are too low or wages and other costs too high, many producers and dealers are unable to make profits. So they MUST shut down business and disemploy their men.

Producers and dealers save costs of production and handling not only by paying low wages but also by employing machines instead of men, thus producing more goods for sale, while fewer consumers are permitted to earn money to buy them.

It is not possible for competitive private enterprise to secure maximum production because competition is enormously wasteful and also because many private owners are not able to afford the most efficient machinery.

Private enterprise prevents abundance by a number of devices. Among these are the fabrication of inferior

articles, monopoly controls, high prices, restricted production, buried patents, cartel agreements and well-planned waste.

Whenever more goods are produced for sale than can be sold at a profit, they MUST be destroyed or stored to keep the market supply scarce, prices high, and profits possible. Then producers MUST stop or slow down production and disemploy men.

The Government then borrows money to scantily support and to pacify the unemployed and their dependents. It also loans money to producers to help them buy more efficient machinery, to disemploy more men for the Government to support.

Government debts increase taxes while both business men and the unemployed workers are made less able to pay taxes. Government debts are increasing faster than population or the national income while employment in industry goes down.

If permitted, the Price System will disemploy so many millions that the Government will not be able to support them either with direct relief or by employment on public works. This will further reduce consumers' buying power, lessen the demand for production, cause more industries to shut down and disemploy still more men. If continued, there will be a complete breakdown both of business and Government, with starvation, violence and chaos.

How To Obtain Full Production

Ever since 1920, even through the Great Depression, America had and now has sufficient resources and ma-

chinery to produce and distribute plenty of all necessary goods for all of us. As long as the resources and machinery are privately owned, however, there will be produced only as much as the owners hope to sell at a profit. In order to secure freedom to produce a full supply for consumers, the resources and machinery must be owned by a national partnership of all consumers.

Machinery must be made to do as much work for us as machinery can do, and the work that human beings only can do must be divided evenly among all persons between certain age limits.

Costs of goods will be measured by the amount of NON-HUMAN ENERGY used to produce and distribute them. The total amount of such ENERGY available for use will be apportioned periodically, as follows:

1. For Overhead Costs: Production of productive equipment; support and education of all under working age; support of all inmates in institutions; all other free goods and services, maintenance and renewal of productive equipment.

2. For production and distribution of goods and services for all others of working age and over.

This last portion of the available non-human energy will be paid out evenly among all persons in this class. Each will receive ENERGY CERTIFICATES, with which he may purchase as great a share of goods and services of his own choice as his share of the available energy will produce and distribute.

Daily reports of consumers' demands will indicate the rate of production necessary for a full supply without overproduction or under production. It will be a Balanced Load System.

The Energy Certificate will make

hoarding of purchasing power for future security unnecessary and impossible. Energy Certificates will be non-transferrable, non-negotiable, non-interest bearing, non-savable, and good only during the stated 2-year production period.

All taxes will be abolished. The cost of public services, for which taxes are levied under a Price System, will be met by deducting that cost from the total available energy (see Item 1 above) as a part of Overhead Costs.

There will be no debts, rents or profits. All useful goods and services for which individuals pay money in a Price System will be distributed directly on the basis of their cost in energy. The need for transferable money has passed in North America.

Most of our exported surplus goods will be exchanged for goods of which we cannot produce enough. For some we shall receive money of the foreign countries. Americans who wish to travel in those countries may exchange some of their Energy Certificates for the foreign money and whatever money they have left when they return to North America, they may then exchange for Energy Certificates.

Many kinds of goods and services will be produced in so great an abundance and at so small cost per unit that it will be more economical to distribute them free, and record the total bulk costs as overhead, than to compute the costs per unit and record the amount distributed to each individual consumer. Among the numerous free services will be health services, local travel and communication, use of assembly halls, admission to all public assemblies, complete education, and possibly water, light and power for homes.

The various industries and services will be classified into departments with

local and regional controls as needed. Responsibilities and duties will be clearly defined. Workers will be employed in their chosen occupations and locations and graded according to proven fitness. Unpleasant jobs will be eliminated or upgraded. Persons of working age whose Price System occupations are abolished when the new system is set up will be reemployed in lines for which they are fitted, on the basis of qualifications.

The officers of each department will be selected by officers above them in the same department who know them and their record. All employed persons will be directing or performing work not for limited wages for themselves or for the profit of private employers but for the benefit of all citizens who need the goods and services being produced. They must work efficiently in order to hold their rank. Besides, the more efficiently they all work the greater will be the general abundance which all will share.

Refusal to work, that is refusal to participate in necessary production, will not be tolerated. People who do not want to work will have their heads examined by competent psychiatrists. There will be no bums, either high-class or low-class.

The directors of all departments together will constitute a general control board, whose chairman subject to removal will be the chief executive, bound to serve the entire nation.

Social Effects of Full Production

By an assurance of plenty for all, the chief causes of greed, graft, bribery, blackmail, extortion, official favoritism, fraud, theft, personal discord, class distinctions, conflicting class and sectional interests will be removed. Without transferable money, there CANNOT be any black markets, kidnaping for ransom, gambling for purchasing power, traffic in vice or

injurious products, or profiteering in war. Thus, the Engineers' Design for Full Production and Direct Distribution will indirectly eliminate more than 95 per cent of all crimes and set up a pattern of human relations which will favor and encourage morality, goodwill and brotherly conduct. The chief purpose of social controls will not be to tell people what they must not do, but will be to discover and carry out most efficiently and economically what the people want done.

The purpose of this whole program is to serve all individuals as fully as possible. Whenever a consumer spends his Energy Certificate, he will VOTE for the goods and services that he himself wants, and he will get them if it is possible to produce and deliver them.

The fullest possible personal liberty, consistent with the general safety and welfare, depends upon an assurance of continuous plenty for all. Plenty for all can be secured, not by wishing or moralizing, not by a political government even with a form and pretense of democracy trying to regulate competitive private enterprise which cannot distribute plenty, but by public enterprise with a concerted Full Production Program managed by competent technicians who know how to get big jobs done.

As we increase production, while lessening the need for human labor, an important purpose of the New Education will be instruction in the beneficial use of leisure time.

There will be full freedom of belief, assembly and expression consistent with the General Welfare. There will be full scope for ingenuity, individual initiative and competition in useful services, cultural activities, hobbies, games and sports, but no freedom for gaining economic advantage and domination over fellow citizens.

No individual, young or old, married or single, will be dependent upon any other individual for material support. No one will be compelled for the sake of a living to submit to any other person's harsh domination or to live or associate with any one who is persistently abusive, offensive or repulsive.

Marriageable persons will be free to choose mates according to mutual attraction, to set up homes and to have children with full assurance of their support.

Discrimination in any form against individuals or minority groups on a basis of race, religion or color will be severely prohibited. All citizens will be guaranteed equal opportunity to advance.

Thus ALL of the unattained ideals of political democracy, i.e., plenty, security and personal liberty, will be attained in the fullest possible measure without any need for political parties, campaigns, petitions, lobbying or general elections.

Furthermore, with full production America, the richest nation in the world, will be more able than ever before to give needed help to less favored nations.

For this Program we do not need to wait for anybody's moral reformation; only for the people to recognize the necessity of working together with competent leaders.

THIS IS TECHNOCRACY!

They Saw the New America

'Into the discovery of the proximity fuse and its fashioning went the work of from 600 to 800 scientists—physicists, chemists, astronomers, electrical engineers.

'At the top was a co-ordinating force that pulled it together—the center of this remarkable nervous system linking so many first-rate minds with so many different skills. The Office of Scientific Research and Development kept in touch with all the scientific projects covering every phase of war research.

'The tieup with industry was very close. Industrial technicians and researchers were in on the whole project. The Navy gave it unlimited backing.

'Nothing like this has ever happened before. Here is the pattern for the solution of all man's life, if only we had the courage to use it in peace as in war.

'Who can say how long it would take to discover the cause and the cure of cancer or infantile paralysis with 600 or 800 men and women working together toward a common goal?

'As these scientists talk about their work, you catch a glimpse of this other world of infinite possibilities. They have seen it. For a brief time, working under the stress of national peril, they've been a part of it.

'And now that peace has broken out, they are seeing it disintegrate. The coherence and the strength that were in it are running away like quicksilver. You can hardly believe that it ever existed.

'Having had a vision of another way of life, they are more aware than most of us of the conflicts and distortions of what we laughingly call normalcy.'—Marquis Childs in his column in the *Chicago Daily Times*, September 29, 1945.

'Nine-tenths of the thinking in America is directed against the interest of 90 percent of the American people.'—Marlene Dietrich, movie star. (As quoted by the *American Freeman*, April 1946.)

Primer of Technocracy

The Answer Is Energy

By Wiley Holcomb, 8342-1

Energy Is Basic

Man has existed on this earth for hundreds of thousands of years. Archeological data and six thousand years of recorded history have given us some idea of how he existed. The most interesting chapter is the story of his struggle for the control and development of the flow of energy. This has been not only the least understood chapter of man's history but also the most misunderstood. Historical research has done an excellent job of piecing together the story of the human race as a whole. Had it confined its written results to a simple recording of the facts, the way of the history student would be less confusing. A great deal of attention, however, is given to acts of political intrigue, military exploits and business acumen, as though by these man had been enabled to progress from a primitive state to what we are pleased to call modern civilization. A more critical examination will disclose that these episodes are only some of the more colorful escapades of our predatory ancestors and had nothing to do with social change.

Social change occurs only when man makes a new application of his accumulated knowledge to the means whereby he lives. In any social system where man is the sole means of doing work, very little social change is possible. Even today, without the use of technology, man cannot spade an acre of ground any quicker than the Egyptian Slave.

The Industrial System and standard of living of today are the result of 150

years of scientific development. It should be noted that the human race made no real progress until it was discovered how to convert energy by mechanical means. It is interesting to note that the first practical steam engine was built in 1776, the year of the signing of the *Declaration of Independence*. Adam Smith's *Wealth of Nations* also was published in that same year.

Every school boy has studied the history of the *Declaration of Independence*. Every economist is familiar with Adam Smith's *Wealth of Nations*, but the significance of James Watt's steam engine is overlooked. The *Declaration of Independence* is an historical document declaring the political independence of the American colonies from England. James Watt's steam engine was the first practical step in the harnessing of the Sun's energy by mechanical means. This effected a profound change in the method of getting work done, and consequently brought social change to the whole social structure. Adam Smith's *Wealth of Nations* was invalidated in the year of its publication by Watt's steam engine and has served but to confuse and confound students even to this day.

Life Is Energy

All living organisms exist only as a result of the flow of energy from the Sun. Plant life is the only living organism which can utilize the sun's energy directly. All other forms of life are one or more steps removed. Hence plant life is the doorway through which the flow of energy

from the sun becomes available to other forms of life. Chlorophyl, the green coloring matter of the plant, can be called the key to life. It is this substance, acting as a catalyst, which effects the wedding of matter and energy. Some plants can be used by man in their natural state, but for the most part they must be processed. Coal and oil, both highly concentrated stores of energy are traceable to the sun. Both are the remains of plants and animals preserved from decay by burial under great thicknesses of rocks. Coal and oil in their present forms are the result of nature's slow process of alteration through geologic ages.

Our industrial system of today is only possible because of man's ability to concentrate and speed up, under more favorable conditions, some of nature's processes. To illustrate this we can use agriculture for an example. Through a process of selection, irrigation and fertilization plants grow and produce far in excess of what they do in their natural state. In the United States in recent years we have been in a position where edible crops could be diverted to industrial uses not related to the food supply. No parallel of this kind existed in previous history, or even for most of the world today.

We have stressed the part played by plants as a converter of the sun's energy for man's use. Here we wish to note an exception. That is the energy of the wind and falling water. Both derive from the sun but are not directly related to the biological processes of plant or animal life. The life of any area, plant, animal or human, is dependent on the continuous flow of energy from the sun. If that flow is interrupted for any appreciable time, life disappears.

Energy Can't Be Evaluated

Man in his primitive state was en-

tirely dependent upon nature for his food and shelter, in perilous competition with the animals. Through the possession of a higher order of intelligence, he was able to change his status from that of competition to that of mastery over the animals, and to varying degrees over nature. We do not know how long this took or the exact order of the steps in his progression but we do know of some of the more significant ones. First came the discovery of fire, then the domestication of certain plants and animals. The early discovery that man, by organizing with others and allotting certain tasks to each, not only increased the total production of the group but also provided more security for the individual was another step.

When man began living in communities, he developed the basic foundation of all Price System economies, i.e., exchange based on commodity evaluation. Any object derives its exchange value on the basis of its relative scarcity or abundance. When man places a value on the product of his labor and exchanges it for the product of someone else's labor, he is in effect attempting to evaluate the flow of energy. This can work only where man is the prime mover. Value depends upon scarcity and energy is plentiful in America.

In the early handicraft-agrarian civilizations man occupied a dual position. He was the prime mover of all work done and he also conducted social affairs among men. Throughout the thousands of years that the human race lived under the scarcity conditions of handicraft-agrarian civilization, he developed a type of social control and mode of behavior best suited to that kind of an environment. It conditioned him into being the most acquisitive of all species of life. It is only

natural, then, that the more astute and ruthless should seek control of the production of scarcity and thus gain a differential advantage over society in general.

This type of control constitutes an interference in the orderly working of any society. However, in a society where man is the prime mover, the opportunities to interfere with its orderly working are restricted to the same low scale at which he is able to produce. The degree of social interference from the top is not dangerous. When the rate at which man utilizes the flow of energy increases, then the opportunities to interfere also increase. Then, social interference from the top becomes a menace to the General Welfare.

In the United States today over 98 percent of all work done is done by energy other than human. Man no longer occupies the same dual role. Our social controls and mode of behavior, however, are still predicated on a theory of scarcity conditions. Today we tolerate a very dangerous degree of interference with the orderly operation of society.

The last 20 years presents an unparalleled example of man in conflict with his social inheritance. Witness our efforts for ever greater production, while at the same time we engage in wholesale destruction, in an effort to maintain our mythical social importance of occupying the dual role of prime mover of all work done and the director of affairs among men. What is the reason for this illogical behavior? It is simply that our Twentieth Century civilization has a background of seven thousand years of handicraft agrarian culture. It has found its modern expression only in the energy conversion and utilization in the era beginning with James Watt's steam engine. To put it another way, the

social hangover of the past dominates our industrial culture today.

Energy Must Be Measured

Energy conversion is the common denominator of man's activities. The control of society is and always has been derived from the energy converted in the process of living. The method of control must, of necessity, be based on the principal energy converter. Man has occupied this position for thousands of years. The domestication of animals, the development of windmills and crude water wheels had no appreciable effect on man's position as the principal energy converter. James Watt did more than build a steam engine. He was tugging at the foundation of man's superimposed social controls.

The mechanical conversion of energy accounts for nearly all work done in the United States today. The method of social control must of necessity be based on this fact. The atomic bomb is forcing a belated recognition of this. The only known way for controlling mechanical energy conversion is by the exact method of measurement. This method of measurement must be extended to the overall control of society.

The only method of social control which conforms to the physical problems posed by a social system which produces its goods and services by two billion installed horsepower of energy converters, is the Energy Certificate of Technocracy. We cannot emphasize too strongly that the Energy Certificate is a method of social control applicable to a high energy converting area ONLY. It is not to be confused with any perpetual motion theories of high finance, politics, economics or philosophy.

To properly understand the func-

tion of the Energy Certificate, we must know under what conditions it is to apply. There must be sufficient natural resources available for the production and distribution of an abundance for all. Such resources include energy, minerals, croplands, trained personnel, technology, equipment, etc. The Energy Certificate then becomes an integral part of the social mechanism in the production and distribution of an abundance. The purchasing power of the Energy Certificate is related quantitatively to the physical cost of production of goods and services, that is, the definitive unit on the Certificate is the equivalent of the energy used in production. The total Energy Certificates used in a 24-hour period are recorded and totaled, thus giving a continuous 24-hour inventory.

From this method of procedure, those responsible for the operation of the production and distribution sequences will be able to make decisions quantitatively. This may sound rather abstruse. If so, let us be reminded of some pertinent facts. The technique of measuring has been applied to 'product control' throughout nearly all modern industry. We are continually increasing our energy conversion capacity by new installations and increasing the efficiency of existing equipment. Atomic energy is no longer just a vague theory. We have set in motion a force of such magnitude that it can be controlled only by exact methods. It is both a challenge and an opportunity.

Conclusion

The essence of our social problem today, then, is the necessity to apply quantitative methods of measurement to its solution. The quantitative character of our present principal energy converters makes this possible, indeed

compulsory. The difference between our Power Age Culture and the handicraft-agrarian civilizations of the past is that we are now in the fortunate position of being able to MEASURE social problems. We can arrive at social decisions by metrical methods.

It is no longer necessary to use the control methods of the past wherein social decisions were effected by opinions and authoritarian dictums. The continued impact of science and technology upon society in the last 150 years has produced a quantitative change in social problems. These can, for the first time in man's history, now be measured. That is the only way to solve them. The Energy Certificate of Technocracy is one of the metrical instruments of social control that can be used in a technological society such as we now live in. There are others of importance also.

The entire social design of Technocracy is based upon technological principles derived from physical laws. The foundation is Energy. The methods of operation are metrical. The end results will be a tremendous advancement in the General Welfare.

If you are one of those Americans concerned about the future of your country; if you are concerned about your own future and that of your family, we urge you to investigate Technocracy. The answer to your problem is there.

Get Away Old Man

The average age of the scientists who worked on the atomic project at Los Alamos, New Mexico, was between 29 and 30. The average age of the special Senate Committee (politicians) on atomic energy is 57½ years. (*Chicago Sun*, November 23, 1945.)

Primer of Technocracy

By Education Division 8741-1

'Every now and then they find a bum dead in a flophouse, with \$5,000 or \$6,000 sewed in his greasy underwear. The story is usually good for three or four paragraphs in the newspapers.

'The American people, collectively, are not unlike such a bum. We live in filthy, substandard holes. . . . Compared with our material resources, the fabled riches in the East would look like the merchandise in a hock shop—yet we are ill-housed.' (Excerpt from an editorial in the *CHICAGO DAILY NEWS*, January 3, 1945.)

Be It Ever So Humble—

TODAY there is a big to-do in this great nation about the housing situation. In fact, the problem is Continental in scope. The shortage of houses in the U. S. is stated to be 3,000,000, by John B. Blanford Jr., national housing administrator. Canada needs 750,000 more new houses. This is in terms of Price System estimates. Why the U. S. should need only 3,000,000 new houses is not elaborated upon. The reason, of course, is that there are only that many citizens who have the wherewithal with which to buy a house at the present time.

As a matter of fact, almost the entire population of Canada and the U. S. needs new housing, but the Price System can't tackle the problem on that basis. So it concentrates on the suckers who have enough cash or credit to be sold. They constitute the market. In the past this number has been running around 400,000 per year. To put it in the more genteel words of C. W. Farrier, Technical Director, National Housing Agency, as quoted in the *Southern Lumberman* for July 15, 1945:

An examination of the statistics of past housing production and of the costs of the housing produced, when compared with the

number of families on whom prudent loan institutions will accept a risk, discloses that the market cannot absorb much more housing at current costs than it has been absorbing in the past. Over the past 40 years the average yearly absorption has been about 445,000 homes. The average becomes even lower—400,000 homes—if the eight boom years of the 1920's are eliminated.

The 1940 census showed the existence of 30 million homes in non-farm areas. The production rate of 400 thousand homes per year would require 75 years merely to replace existing housing; and even that would not allow for the production of such additional housing as might be necessary.

In 1925, the best house construction year the U. S. Price System ever had, only 1,000,000 new homes were built. Leaving out the increase in population, it would take over 30 years to rehouse this Nation by Price System methods, if they worked at top speed with the best jerry techniques. Then, they could start all over again for the first houses would all have caved in.

There has always been a housing shortage in the U. S. This has been

aggravated since Pearl Harbor on account of several factors:

- (1) Very little new building since the war began;
- (2) Upturn in population due to war-time births; and
- (3) Migration to towns and cities due to war work and mechanization on the farm.

There's No Place Like Home

The increase in population since 1940 is already 7,000,000. It is estimated that total population in the U. S. will be 145,000,000 by 1950.

Due to mechanization of farming, the farm labor force has decreased by more than 10 percent under the 1935-1939 average. This process is just getting under way. The farm population of the future will be smaller. These people have moved into towns and cities. There they will stay for there is no place else for them to go.

Pearl Harbor and priorities put an end to construction of houses except for some wartime housing. Twelve million people went to work in war plants. This includes the 8,500,000 who were unemployed in 1940. Of course, they took better houses and apartments.

Now 12,000,000 veterans are returning home from the wars. Many of them have a sizeable stake for the first time in their lives. They want to get married. They need houses and apartments to live in.

All this adds up to a housing shortage that will do two things. It will, first of all, get worse. The politicians will muddle around with the problem to their hearts' content, getting in everybody's hair and accomplishing nothing. The second thing that will happen is that new technology will be introduced into the house construction industry. This new technology, because of Price System restrictions, cannot solve America's housing problem

now. It will, however, do considerable toward alleviating the situation.

*Rufus, Rastus, Johnson, Brown—
What You Gonna Do When
The Rent Comes 'Round?*

Any Price System entrepreneur with a cash register concept of social values, viewing this situation, is bound to chortle with glee. Construction interests, real estate firms and landlords are licking their chops. Once again they've got the great American sucker just where they want him. And brother, do they know it. The average landlord today is as snooty as a Maharajah. If it were not for the O.P.A., they would have inflated their rents nine times over by now.

As it is, they reduce heat, service and repairs to the limit. They demand and receive secret payments on the side, above the quoted ceiling price. They behave in every respect according to the classic concept of Price System rules: 'Take all you can grab and give back as little as you have to.' They say that they are caught between the upper and nether millstones of rising costs and fixed prices. For reference on this alibi, see *Great Lakes Technocrat* for May-June, 1945, page 53. As a matter of fact they behave that way because that's the code of the Price System. 'Never give a sucker a break..'

The independent small landlords of the U. S. have recently formed a National Organization. The Real Estate and Construction interests have had their national unions for some time. The line of action on which the lot of them are working is typically Price System. It is to break down rent control ceilings so as to obtain the following preferential advantages for their group. First comes higher rents for the cockroach rooming and apartment house operating segment of the conspiracy and, of course, for the

tonier places on the avenue also. Then comes higher prices and fatter profits for the construction firms and materiel suppliers. This goal is to be realized by applying the pressure of higher rents to tenants and thus sandbagging them into buying homes at the present inflated prices.

The average quotation on a house today is 50 percent higher than in 1940. If rent ceilings are broken down, new construction for rental purposes will be undertaken also, but not before. The housing gentlemen have previous experience at this game to their credit.

Shylock In Wonderland

From Armistice Day, 1918, till 1925 rents rose 57 percent. The thing which finally halted the rise was that new construction caught up with deferred demand of the market. Today, the housing pressures are far greater allaround. The construction industry, materiel suppliers and organized labor in cahoots with the politicians have done their level best since the last boom to freeze technology in construction to something like the level of the 'prosperous twenties.' That magnificent hindsight is the source of most of their real trouble today. In the words of Harry A. Dick, president of the Associated General Contractors:

It is much easier to gear our business economy to war than to shift it back to profitable peacetime operations. (*Chicago Daily News*, May 2, 1945).

The great uncertain factor in the construction industry today is new technology. There are so many new things on the horizon in housing that the entrepreneur in that line is dizzy from trying to figure out in which direction to stick his neck out.

There are the new solar houses. They will put an awful crimp in the

nation's coal consumption. Plastic, completely air-conditioned, prefabricated houses for \$1,500 are envisioned by one noted industrial designer. Packaged houses, complete to the last hardware fixtures, are an already established item. Pre-built houses, such as are used by TVA, are in the running. Standard-sized panels, providing several times the structural strength necessary, are now available. They can be assembled according to any design.

Mass production methods are entering the housing field. The old-fashioned nail-at-a-time method will have to yield. Foster Gunnison of Gunnison Homes, Inc. states that in the old handicraft method of construction there were '16,000 classifications' of home building materials. The houses they are turning off the assembly line at New Albany, Indiana, are so well constructed that the dealer is able to guarantee the monthly fuel cost to a prospective buyer, in any climate.

There are dozens of other new developments: radiant heating; tetra-cresyl silicate or liquid heating, a revolutionary new system for supplying heat and power for homes; magnesium oxychloride cement flooring, called Hubbelite, which repels bacteria, mold and cockroaches; reverse cycle refrigeration, to heat the inside of homes from the latent heat in the outside air; electrical household robots of all kinds that will do everything around the home except burp the baby. Yes, sir! It's no wonder Shylock is in a daze.

In the meantime, the great majority of people live like bums in a flophouse. What's more, they will continue to live that way under the Price System. Oh, there will be a minority who will get better housing. The Price System works that way. It is, however, congenitally unable to organize all the new technology in the construction industry and deliver it to the human

components of this Continent in the form of high grade housing for all. The reason is that this is a technological problem and not a financial, sand-bagging operation.

Engineers To The Rescue

The end products of design are radically different if one lays out the whole scheme of a given function in advance and then works down to the details, from what they would be if one started on the details and worked from them to the more general complex. (*Technocracy Study Course*, page 264)

This latter course of action, that is, starting from the details and working to the general complex, is how the Price System operates. The former course of laying out the whole scheme of a function in advance and then working down to the details is how Technology operates.

It can now be understood what is meant by referring to Price System methods in housing. Architects have designed thousands of houses, 'but no one has ever designed a system of housing on a Continental Scale.'

This brings us to the technological foundation of the whole subject of housing, namely, what are the buildings for? What do we have to build them with? What does it cost physically to maintain them? And how long will they last? (*Ibid*, page 262)

The answers to these questions have been all worked out. If and when applied, they are capable of providing the very best available housing for every citizen of North America. The requirements are few and scientifically sound. The first one is that we, the people of North America, must abandon the Price System and set up a

socially engineered system. After that is done, we can all have good housing. And it won't take 30 years to get it either.

There is a great deal more to be said about housing. None of it, however, is worth listening to unless it starts from the basic premise of Technocracy. 'All phenomena involved in the operation of a social system are metrical.' The housing problem is only one facet of the far greater problem of distribution of goods and services as a whole. This can never be solved by Price System methods.

So, let us resign ourselves to live like bums in a flophouse. After all, the situation redounds to the greater glory of the big shots on top of the social dung heap, doesn't it? Every man is entitled to as many crumbs as he can grab in the pursuit of life, liberty and happiness, isn't he? It says so in the Declaration of Independence.

Or, would you rather have good housing? If so, then wake up *MAN! Snap Out Of It*. Use the feeble wits the Lord gave you. Examine the operating mechanism of the crazy Price System you exist under. Observe its tyranny and regimentation on all sides. Go through the book until you see what Technology has to offer. Accept no substitutes for the real thing. Demand action. The time is *NOW*. Do you want to live like a bum in a dirty flophouse all your life?

We, the people of North America, can move into a wonderful system of functional housing any time we want to. We have the men, machines, materials and knowledge to build with. If we do not act, we will die like bums in the collapse and chaos of this perishing economic order. When the cops of history examine the remains for identification, they will say: 'The poor fool had thousands sewed up in his underwear all the time.'

Primer of Technocracy

'Boom and Bust' or Balanced Load?

By Henry Elsner, Jr., 8342-1

'Already Walks Tomorrow'

For countless ages men have struggled with the environment into which they were born. In the past the problems of society, arising out of the actions of man in relation to his environment, were dealt with by philosophers, merchants and politicians. With the advent of the industrial revolution, for the first time in history, an entirely new set of problems was thrust upon society. These conditions, barely noticeable at first, have been brought to the fore through the ever-increasing pace of scientific and technological advances. It is only within the last three decades that this technological revolution has made its full effect felt upon our economic, political, and social life. And it is only within the last two decades that a unique movement has arisen which deals with these problems from a scientific and technological approach. This is the only method which is in accord with the times in which we live. This body of thought is known as *Technocracy*. It is science applied to the social order.

Using the one common denominator, energy, by which production and consumption of goods and services can be measured without resorting to the 'witchcraft of economics,' Technocracy has analyzed the social structure of the North American Continent. It has also drawn the blueprints of a technological society to take the place of this Price System, which is headed toward collapse. Technocracy is not agitating for social change but preparing for it. To this end the Organization conducts study classes

throughout the North American Continent, in which an ever-increasing number of Americans are learning the physical causes of the mounting confusion we daily observe around us and the physical structure of the society which our science and technology make imperative that we install if we are to survive the collapse of the Price System.

Up until the time of the industrial revolution, human society was static. The entire world operated under an economy of natural scarcity, due to the fact that all physical wealth had to be produced by human toil and hand tools. Because there was never enough to go around, a system of exchange grew up, using money to represent the goods being traded in. As the amount of physical wealth remained constant, this system worked quite well for thousands of years. With the introduction of the method of producing goods through the application of extraneous energy (energy obtained from sources other than human muscle-power), a new set of factors entered the picture. Up through the 1800's and early 1900's tremendous industrial expansion took place. The final result, when the period of expansion leveled off in the 1920's here in North America, was the production of such an abundance as to utterly swamp an economic system designed to fit the needs of an economy of scarcity. This is what brought on the debacle of 'The Great Depression.'

Production of an unsalable abundance is the one predominant factor which is forcing our economic system to a halt. It was this production which

caused the periodic slumps of 1893, 1908, 1921, and finally 1929. All of these so-called 'business cycles' (not really cycles at all but oscillations in a mean curve of rising production, each slump approximately 30 percent greater than the one previous), were alleviated by further expansion, until productive capacity once more caught up. This same abundance is the underlying factor behind many of our present troubles. We may expect to see rising inflation, with or without OPA, and prosperity—due to the current shortages, or scarcity; then, as soon as the market becomes 'flooded' with an unsalable abundance, another rock-bottom depression—probably the last one.

Of course, there are other factors, such as technological disemployment, inability to maintain total purchasing power, approaching liquidity of bank assets, mounting discrepancies in income levels, increasing social unbalance, etc. These are only a few more of the trends which presage the coming change.

Energy Is Basic

As the application of science and technology to society has invalidated the practice of exchange, it follows that all the philosophic concepts hinged on such a system must be dispensed with. Hence, in a Technocracy, the concepts of price, debt and value (in relation to the scarcity of an item), would cease to figure in the distribution system. Production and consumption would be measured by the simplest and most stable method possible. We know that with the present plant capacity it is possible to produce and distribute goods and services equivalent to more than \$20,000 annual income for everyone.

We are forced to use the monetary

analogy, but due to the characteristics of money, the distribution of abundance cannot be accomplished by its use. Money is a device to facilitate exchange. It is negotiable; interest bearing; and can be saved. These characteristics render it unfit as a medium of distribution. The function of distribution is opposite to that of exchange. Therefore, a medium of distribution must also have opposite characteristics to a medium of exchange. It must be non-negotiable; non-interest bearing; and non-savable.

The most efficient manner of effecting distribution would be to measure the total number of units of energy produced in a given period, deduct the energy cost of the necessary free services (police, fire department, education, public health, housing, etc.), and divide the remainder by the number of the population and then distribute these energy units to the population in the form of purchasing power. This system would provide every citizen of the Technate with equal, but not identical, purchasing power, and at the same time maintain an accurate measure of consumption. These energy units would be in the form of certificates, which the individual would surrender upon the purchase of an item. As all data pertinent to the purchase would be punched in code letters on the used certificate, a daily record would be kept which would enable production to be kept at a level commensurate with consumption. Under this balanced-load system of operations, the 'boom and bust cycles of the Price System would be impossible.

The administration in a Technate is as unlike anything we have today as are other phases of Technocracy's program. It has no political precedent; it is neither democratic, fascistic, nor communistic. For along with the old

economic philosophies will go the political philosophies. Government will be neither by ballots nor bullets; but, like any technological project, a functional administration. All related industries and services would be divided into sequences. There are about 100, all told. All administrators, at all levels of a given sequence would be appointed from above; candidates being nominated from among the qualified men in the rank below the vacant office. The top directors of all the various sequences make up the Continental Control. These Continental Directors select one of their number as Continental Director-in-Chief. He is the Chief Executive. His tenure of office continues until death or the retirement age of 45 is reached. He is also subject to recall by a vote of two-thirds of the Continental Control. His decisions can be vetoed by a two-thirds vote also.

So far, we have given only the bare outline of one or two points in Technocracy's synthesis. That is all there is room for here. Technocracy does not guarantee to make any one happy. It is not a cure-all for everyone's personal woes, but merely an engineering design for operating the North American Continent. However, it is certain that such vast changes in our society as have previously been touched upon will have their effect on our daily lives. Practically everything man does is the result of his surroundings, using the word in the broadest sense to include all of his experiences, as well as his immediate living conditions. All of us are born with certain instincts, motives and desires which are shaped by our environment.

In a Technocracy, a high standard of living, better education, security and release from toil would lead to a much finer culture and 'higher life' than we have ever before had in our

history. For an excellent exposition of this point, read 'The Culture of Abundance' by E. Merrill Root, available at any Technocracy Section. Let's bring it closer home. How would you live your life if you didn't have to worry about where tomorrow's daily bread was coming from; if you were working on a job you really enjoyed doing; and if you did not have to worry about the future?

Why don't you, who are seeking for a solution to the problems of your own lives, approach them from the basis of the problems which face every one of us as members of today's society! In the times in which we now are living, no one can withdraw himself from the rest of humanity and attempt to solve his problems alone. In that direction lies only confusion, social chaos, and defeat. Let us unite and operate in order that we may provide abundance, security and equal opportunity for all Americans. Then we, as individuals, can also have them. It is entirely up to you, the American people.

Technocracy stands ready with a design for Continental Social Engineering which will be installed whenever YOU demand it. Within the framework of that design is the solution for not only nearly all of our collective problems but also nearly all of our individual problems.

Don't take this writer's word for it. JOIN TECHNOCRACY, and INVESTIGATE for yourself!

A Twentieth Century Fund survey shows that China and India, with 40 percent of the world's population, account for only 2 percent of its manufacturing and 8.4 percent of its imports of manufactured goods.

Technocracy and Your Trade

The Older Worker

By Organization Division, 8741-1

'I'm Trudgin' My Weary Way'

In December, 1945, the civilian labor force totaled 53,310,000 persons. There were 4,320,000 between the ages of 14 to 19; 5,080,000 between 20 and 24 years old; 23,700,000 in the 25 to 44 year old bracket; and 17,280,000 between 45 and 64 years of age. Last, and also least, there were 2,930,000 workers over 65 years of age, still trying to scabble a meager existence out of the Price System.

In addition to these older workers, there were, at the end of 1945, aside from Social Security and private charity, over 2,000,000 other oldsters existing on Old Age Assistance (relief) of about \$31 a month. This latter group has been driven entirely outside the economic circle. 'Free Enterprise' has no further use for them. They have contributed their last mite. Now they are turned loose to reap the ancient harvest of old age under the Price System, the bitter tea of 'sweet charity.' The number of American citizens enjoying this type of 'freedom from want' increases by about 50,000 every year, according to the Bureau of Labor Statistics. With this in mind, suppose we examine in some detail the prospects facing almost 3,000,000 old men and women, still clinging to a precarious foothold in the economic circle.

Data issued by the Metropolitan Life Insurance Company in August, 1945, reveals that the life expectancy of industrial workers has increased from 34 years in 1889 to 64 years in 1944. A corollary to this increased longevity is the growing proportion

of older persons in the population. The number of persons over 65 years old increases by about 200,000 per year. In December, 1945, the number of workers in the civilian labor force over 45 years of age comprised 38 percent of the total. Those over 65 years old constituted 5.5 percent.

'Once I Was Young and Han'some'

The rise in life expectancy between 1889 and 1944 coincides with the rise of modern technology. Indeed, it is a product of technology and science. It is no longer axiomatic that biological age and chronological age are synonymous. A worker may be much younger, physically and mentally, than the calendar of his years indicates. Dr. Edward J. Stieglitz in *Orientation of the Problem of Mental Disorders in Later Life*, writes: 'a tremendously increased longevity is here. It will probably increase further. . . . The time has come at last when men are living long enough to think. Lengthening of the life span may be either a curse or a blessing.'

If it is left to free enterprise, the increased life span of older workers will not be much of a blessing. The Bureau of Labor Statistics observes:

Progressive increases in the life span of industrial workers at the same time that the tendency in peacetime industry is toward the employment of younger people make the employment problem of the older worker one of increasing difficulty. . . . two conflicting trends become very evi-

In The Question Box

Science Is A Method

By Speakers Division, 8741-1

What are the qualifications of individuals who represent 'Science' in this movement?

This question is loaded with implications, inferences and bum logic. It implies that science is something unrelated to Technocracy. It states there are representatives from this unrelated group in Technocracy. It infers that the qualifications needed in that other field are necessary to validate Technocracy. The logic is lousy, and the assumption erroneous.

Science is not a separate group of men. It is a method of procedure, together with the body of knowledge that has been acquired by exercising that method. This body of knowledge is organized and verifiable. It has many branches. Each branch has its own field of technical problems. For instance, physics deals with the laws of inanimate things such as light, heat, sound, hydraulics, electricity, mechanics, etc. Biology deals with the physiology, morphology, ecology, etc., of living organisms such as plants, animals and man. Then there is a branch of science called biophysics, which deals with phenomena involved where the two fields overlap. An example would be in the use of supersonic sound waves. When applied to testing steel for cracks and other flaws this would be a technical problem in physics. When applied to homogenizing milk, it might be called a problem in biophysics, since both biology and physics are involved.

The same overlapping occurs in many branches of science. There is chemistry, biochemistry and physical chemistry; astronomy and astrophysics;

geology and geophysics; and so on. Even in branches of science that may not overlap such as, for instance, archaeology and aeronautics, there is a common relationship in the overall methods used.

The point of all this is that there are not many sciences, but only one science. It is not a special body of knowledge or a separate group of men. Science is a method of procedure for arriving at solutions to problems. It pervades our entire culture today. Modern industry is an outgrowth of the application of the scientific method to problems of production of goods and services.

Being, as it is, a method of operations, no group or individual can get a monopoly on it. Any one who exercises the scientific method could be called a scientist in his own sphere. Therefore, although we have trained specialists in all branches of science who stand above the crowd in achievement, it is impossible to isolate and identify scientists as a group. A technician, for instance, a power house attendant, must operate the power producing machinery in accordance with the physical laws involved. To that extent he exercises the scientific method.

An engineer building a bridge had better get his decimal points correct. Whether it is as a technician, engineer, academician, or advanced researcher, whether it's in applied or pure science, the method of procedure, tailored to fit the field, is the same, in all cases. There are two steps, or stages, involved. First, you collect all the available facts in the case. Then you exam-

fine the problem by breaking it down into its component parts. This breakdown will reveal certain cause and effect relationships in the data. These may then be classified and interpreted. This process uncovers generalizations, or laws, which are inherent in the data. This first step of the scientific method is called analysis.

The second step is one of synthesis. Here you make use of these generalizations, or laws, to recombine the factors into a whole, or a new form. Induction (reasoning from the parts to the whole) and deduction (reasoning from the whole to the parts) are both used in the scientific method. They are not used from a basis of prior assumptions but in strict accord with facts. Observation, research and experiment are used throughout both steps. The synthetic step might also be called the operational step. It seeks to apply physical laws to the phenomena of the world around us so as to indicate solutions to problems and to determine the next most probable development in any field.

Thus, the nature of science prevents it from ever becoming the special property of any group. It belongs to everybody. Ask yourself which researcher in pure science discovered the principles of the lever, the wedge, the pulley, the inclined plane, the wheel. Who discovered fire? Who first smelted iron ore? The science of today stands on the shoulders of the science of yesterday and so on back to the beginning of social life. Contributions to it have been made by countless thousands of unsung individuals in addition to those recorded in history. It is both because of this and because science is a method of operations that it is the common property of all mankind. The fruits of science belong to the people.

Say what you will, there is no way to dodge these facts. Because of the

pervasion of science in American civilization, there is no such a thing as some mystical body having representatives in Technocracy. Science and scientists are everywhere. Technocracy is itself a branch of Science. It is the social aspect of all science. Consequently, it is in no need of representatives from other branches of science who have little or no training in its social aspects. This is not intended to deprecate the accomplishments of other scientists in the general field. Technocracy salutes and respects any and all science. It goes even further. Technocracy states that science is the only hope for North America.

Nearly all the worthwhile things in modern American civilization came about as the result of science. What Technocracy is after is to apply the scientific method to the operation of our entire social order. It is not enough that it is used to a limited extent in industrial production and in other fields. Science and technology have demonstrated their worthiness by developing America's industrial structure to the point where it can now produce and distribute abundance to all citizens. With this abundance will come security and equal opportunity in life for all. In order to achieve this, science must be free from restrictions.

The only restriction holding it back is the Price System. The Price System uses science for business reasons but refuses to let it operate freely. Here is the cause of nine-tenths of our social problems today. Scientific gentlemen in our universities talk a great deal about how science must be free. But, they envision only the freedom to talk and exchange information. This is a picayunish freedom. Of what use to the people is it for scientists to be permitted to talk and exchange information in this age of restricted production, monopoly con-

trols, buried patents and international cartels. Hovering over all the bull sessions of scientists, like the shadow of Mephistopheles, hangs the Price System. It makes the rules. It says: 'You may go so far and no farther. When your science interferes with my artificial scarcity, that's where you stop.'

Technocracy has analyzed the Price System with the scientific method. It has also synthesized a new type of social system. This will be a non-Price System organized along technological lines and operated by scientific principles. In that social system, and in no other, can science ever achieve the maximum of freedom from restraint. This goes for the people too. It is the Price System that is the ages-old enemy of the higher aspirations of mankind. If we want to realize those dreams we dream when we dream of a better world,

we must abandon the Price System.

Here, then, is an outline of the qualifications of individuals who represent the social aspect of science in Technocracy. They can be acquired nowhere else but inside the Organization of Technocracy. They consist of a physical understanding of the Price System and a grasp of the scientific design of a new social system. That's all there is to it. Although one may have a string of degrees behind his name as long as the tail on Bobby Jones' kite, he is a complete social moron without it.

Yes, Technocracy needs plenty of representatives, but not from other fields. They must be schooled in the analysis and synthesis of Technocracy. Almost any one can do it. Remember, a scientist is as a scientist does. You, too, can be successful. Why not join Technocracy, and find out!

Deep In The Racial Stream

John Stevens (1749-1838) invented the multi-tubular, upright boiler. For many years he tried to convince an unsympathetic public that steam railroads would speed the country's development. He established the world's first steam ferry between Hoboken and New York in 1811. Finally, at the age of 76 to prove his claims, he built and demonstrated the first American steam locomotive in 1825. It ran on tracks around his estate. (*Invention News and Views*, August, 1946.)

'Railroads used 116 pounds of coal to move 1000 tons of freight and equipment one mile in 1945, a saving of 28 per cent when compared with 1921 when 162 pounds were required to perform the same service. The average capacity of a freight car is now 51 tons compared with 42.4 tons in 1920.' (*Chicago Daily News*, October 3, 1946.)

'We are now able to take a less derogatory view of man's nature. In the light of comparative psychology genuine altruism may be regarded, not as something concocted out of one's individual experience, but as a deep seat resting upon basic instincts that go far down in the animal kingdom. When parental care first appeared in the animal world it marked the origin of a great new epoch in the evolution of life. Reproduction is an essentially altruistic function in that it is primarily concerned, not with the welfare of the individual, but with that of others that arise from it. We may regard it as the basic altruistic activity from which all others are lineal descendants.—Dr. S. J. Holmes, University of California zoologist. (As quoted by the *New York Times*, July 14, 1946.)

The peanut is not a nut.

NOTICE

To Our Readers

If you will send in seven names to 'Great Lakes Technocrat,' together with a one dollar bill we will mail each one a sample copy of this issue; 7 for \$1.00.

Facts In A Nutshell

'If new-born chicks are fed only bacteria-free food, they die. Add some of the droppings of a hen, and the chicks thrive. They need bacteria to digest food.'—*Science Digest*, March 1946.

'An acre of corn takes from the soil approximately 90 pounds of nitrogen, 60 pounds of potassium and 12 pounds of phosphorus.'—*Science Digest*, March 1946.

In 1896 there were only 16 cars registered in the United States. Today, on the 50th Anniversary of the automotive industry, there are 25,500,000 cars.

'Geodetic indications point to the fact that there is a vast potential oil field in northern Alaska that can be made secure for the future national use.' From Report of House Appropriations Committee on the Navy Appropriation Bill, allotting \$9,600,000 for drilling in northern Alaska.

In 1921 there were 178 tire manufacturing plants in the country, says a Twentieth Century Fund study, while in 1937 there were only 46.

The electrical manufacturing industry, says a Twentieth Century Fund study, covers about 170 subdivisions and over 300,000 distinguishable products.

More than 90 percent of our investment in business plant and equipment during the decade 1931-1940 was for replacement purposes only, according to a Twentieth Century Fund survey.

Some Technocracy Section Addresses in Great Lakes Area

- 8040- 2—Box 356, Ambridge, Pa.
- 8040- 3—158 Brighton Ave., Rochester, Pa.
- 8041- 1—1613 East 51st St., Ashtabula, Ohio.
- 8141- 3—39 E. Market St., Akron, O.
- 8141- 4—2237 Front St., Cuyahoga Falls, Ohio.
- 8141- 7—P. O. Box 270, Barberton, O.
- 8141-14—P. O. Box 553, Kent, Ohio.
- 8141-15—10537 St. Claire Ave., Cleveland 8, Ohio.
- 8240- 1—207 N. Washington St., Galion, Ohio.
- R. D. 8242—c/o John Reynolds, St. Clair, R. No. 2, Mich.
- 8341- 1—3242 Monroe St., Toledo 6, Ohio.
- 8342- 1—9108 Woodward Ave., Detroit 2, Mich.
- 8342- 2—112 N. Tasmania, Pontiac, Mich.
- 8343- 1—6717 N. Saginaw St., Flint 5, Mich.
- 8439- 1—37 E. Fifth St., Dayton 2, Ohio.
- 8741- 1—3178 N. Clark St., Chicago 14, Ill.
- 8743- 1—3546 N. Green Bay Ave., Milwaukee 12, Wis.
- 8844- 1—620 S. Broadway, Green Bay, Wis.
- 8844- 2—1011 W. College Ave., Appleton, Wis.
- 8844- 3—220½ High St., Neenah, Wis.
- 9038- 1—4518 Delmar Blvd., St. Louis, Mo.
- R. D. 9041—2428 13th Ave., Rock Island, Ill.
- R. D. 9140—18 N. 5th St., Keokuk, Iowa.
- R. D. 9344—Box 572, Uptown St. Paul 2, Minn.
- 9344- 1—30 N. 10th St., Minneapolis 3, Minn.
- 9439- 1—P. O. Box 209, Kansas City 17, Kan.
- 9648- 1—819 N. Duluth Ave., Thief River Falls, Minn.
- R. D. 9737—4442 Bayley, Wichita 9, Kan.

In the Question Box

Planned Scarcity

By Speakers Division, 8741-1

What will become of free enterprise when we get free energy?

THERE'S not much sense in worrying about this. We will never get 'free' energy under 'free enterprise.' The purpose of business is to exploit natural resources and human beings for all the profit the traffic can stand. Regardless of how low technology may push the cost of energy 'free enterprise' will see to it that a nice fat markup is added on. There is no escape from the price tag under the Price System.

Only about 20 percent of the price of electric power is represented by fuel cost today in North America. The rest consists of costs of installations to convert the energy, costs of distribution and other fixed costs of the industry. Among these are rent, interest, taxes, wages and salaries, maintenance, amortization, depreciation, etc. Add to this a nice, fat markup for profits, and you get the price of power to the consumer. That is how the formula works. There's no place in it for 'free' energy.

The Price System is a system of trade and commerce (with the necessary accessory social super-structure) wherein goods and services are bought and sold (exchanged) on a basis of their value. This is done by means of a medium of exchange, called 'money.' The value of goods and services is arrived at by estimating (or regulating) their relative scarcity or abundance. When any commodity is scarce, it is highly valued, and thus commands a higher price than when it is more abundant. Consequently, it is the perpetual business of good

old 'free enterprise' to see to it that goods and services remain relatively scarce. Then a good price can be extracted out of their exchange. If goods and services were allowed to become abundant, prices would drop to zero. Nothing could be bought or sold and business (free enterprise) would come to an end. Is that clear?

Everyone wants to live as well as possible. To do this, all people require a relatively similar and constant amount of staple goods and services. These include not only adequate food, clothing and shelter, but adequate education, health and purchasing power. They also need freedom from restraint in religion, speech, culture, sports and hobbies, equal opportunity in life and security from birth to death.

These are some of the staple outputs of any social system upon which people rely for the pursuit of civilized life. One would think that the first concern of society as a whole would be to see to it that these staples are provided in abundance, so that the level of civilization might be high. Such is not the case, however, in the type of social system defined as a Price System. This kind of a system is based upon keeping the staples of civilization scarce enough, so that they can be bought and sold.

Since all people require these staples, there is a tendency to place a higher desire upon some than upon others when some of them become scarce. Value, in trade and commerce, is the force of human need and desire reacting upon the scarcity of living

staples. Good old 'free enterprise' realizes all this. So what it does to maintain its system of special privilege is to frame the Rules of the System to revolve around the idea of value. Then all that has to be done is to manipulate the supply of goods and services, so they don't become abundant. Human need takes care of the rest.

The net result is a social system wherein a constant cat and dog fight goes on among people for survival. Each one needs access to the supply of staples for civilized living. Since 'free enterprise' has regulated them into scarcity, there isn't enough to give each one all he needs. Only the blessed minority get an adequate supply. These are the smart boys who were smart enough to get born into the right families, or smart enough to make the right social and business connections; or smart enough to chisel out a soft spot for themselves by hook or crook. The talent for this type of smartness is quite uncommon among the general population. Most Americans are just ordinary, plain, decent folks who like to live and let live.

Perhaps a little factual operating evidence will help to clear away the last doubt about the inability of 'free enterprise' to handle 'free energy.' As a matter of record, North America has more available energy now than it can use under the Price System.

Technocracy magazine, No. 9, for February 1937, reveals that this was the case ten years and more ago. For instance: In the boom year of 1929 Public Utility plants in the U. S. produced over 97,000,000,000 kilowatt-hours of electricity. Installed capacity at that time was almost 32,000,000 kilowatts. Thus, the load factor, that is, the actual output as compared to the possible output under continuous operations, was a little over 30 per-

cent. The U. S. Statistical Abstract reveals that the load factor on electric production for public use in 1944 was only around 50 percent. That was the year of peak war production too. The installed capacity of all power generating plants in the U. S. in 1945 was over 50,000,000 kilowatts of energy. In 1939 the known but undeveloped water power sites in the U. S. had a potential annual output of 418,000,000,000 kilowatt-hours of energy at 80 percent of capacity.

In Canada few of the rivers have been surveyed. However, 'Canada's developed plus undeveloped sites which have been surveyed could produce 229,000,000,000 kilowatt-hours per year at 80 percent of capacity.' The last two estimates are from *Technocracy* magazine, No. 16 for July 1939. Thus, we see that North America's problem is not how to get 'free' energy but how to use the energy already available. These facts are constantly ignored or glossed over in all the talk about 'free' energy.

Energy is 'free' now if we want it that way. When the Sun sends out its ceaseless supply of radiant energy across the void of space, it does not send an itemized bill along with it. When the earth stores this radiation and converts it into other more usable forms, it does not attach a price tag thereto. Those feats are accomplished by good old 'free enterprise.' The law of the physical universe is energy first, then all other things. The rule of 'free enterprise' is price first, then energy. No price, no energy.

We exist under the tyranny and regimentation of a planned economy for the extortion of price. It is a system of planned scarcity, planned low living standards for the great majority, and planned special privileges for the blessed minority. The plan of the Price System demands a

price for all the staple goods required for civilized life. However, the plan refuses to provide (or is unable to provide) adequate purchasing power to the great majority of citizens, so that they may be able to pay the price demanded.

In order to verify this, it is only necessary to observe the common operations of daily living among your friends, neighbors, and fellow citizens. Note how the formula of price works as a dictator to keep down the General welfare of all. If you would like to find a way out of this social mess, join a Technocracy Study Class. Technocracy teaches the physical facts about the Price System. It also presents a solution in the form of a

new social system designed to produce and distribute abundance to all on a non-Price basis.

A non-Price System operated by engineering methods is possible in North America now. We have plenty of natural resources, plenty of scientists, engineers and skilled personnel, plenty of industrial plants and equipment. North America's problem is not how to get 'free' energy but how to coordinate the above factors into a scientific design of social operations. You may rest assured that when this job is completed, there will be no place in it for the planned scarcity that for 7,000 years has hidden its operations behind a false front labeled 'free enterprise.'

Get Ready For More, Uncle

In addition to the National Capital and the city of Washington there are 40 farms in the District of Columbia with a total acreage of 1854. Recently the Senate Economy Committee issued a survey of Federal Subsidies in the last 12 years. This reveals that the Department of Agriculture has paid out a total of \$81,752,532 in subsidies to the District of Columbia in the last 12 years. If you divide this by 40 it turns out that each farm in the District got about \$2,043,813 in subsidies. The Agriculture Department challenged the Committee's findings and the Committee replied that its findings were based on the department's figures in its own reports. (*Labor*, March 15, 1947.)

The Budget Bureau recently worked out a list of Federal subsidies. 'Some keep prices up. Some keep them down. Some mail checks directly to the people. Some the Federal Government shells out to states. And the states in turn shell out to both agencies and people. Inci-

dentally, the outright relief measures of the 1930's spent a good deal less than the various subsidies to business in the years 1934-45. All told, relief cost about \$8,600,000,000. Subsidies to business totaled \$13,000,000,000.' (*Christian Science Monitor*, March 19, 1947.)

There is an old American belief that all auctioneers are colonels. Be that as it may the 'colonels' report through their organization the National Association of Auctioneers that business is getting better all the time. 'Their business is to dispose of overstocks, of distress merchandise, to raise the money a businessman needs to stave off bankruptcy.' The 'colonels' flourished mightily during the 30's but have had lean pickings during the recent fat war years. There are estimated to be about 50,000 auctioneers in the U. S. In commenting on this *Business Week* for March 1, 1947 observes: 'And good business for the colonels usually means bad business for the general economy.'

Each in His Own Tongue

By Publications Division, 8741-1

VOICE OF THE PRICE SYSTEM

A Prophet Babbles Again

The cost of living will continue to rise during 1947 due largely to the lack of interest in their work by so many wagedworkers.

Roger Babson in his syndicated column (as quoted by the *New Republic*, January 20, 1947).

Good Old Free Enterprise

Two or three years ago we proposed a reduction in the life of flashlight lamps from the old basis, on which one lamp was supposed to outlast three batteries, to a point where the lamp and one battery would have about the same life. The battery manufacturers went part way with us on this and accepted lamps of two battery lives instead of three. We have been continuing our efforts to bring about the one battery life lamps. If this were done it would increase our flashlight business about 60 per cent. . . . The constant process of reduction of lamp life (household size) that we have been carrying on has kept the volume of business up.

Extracts from inter-office memos and letters between engineers and officials of the General Electric Company as disclosed in a report on cartels by the Twentieth Century Fund. (As reported and quoted by *Labor*, November 16, 1946.)

Is That A Motion?

If people would think more of fairies they would soon forget the atom bomb.

Walt Disney, movie producer, as quoted in an A. P. dispatch from Dublin, Eire, where Disney is on an expedition in search of fairy lore for

a new picture. (From the *Chicago Sun*, November 25, 1946.)

Minority Group Gospel

The job of any union is to get as much wages for its members as the traffic will bear.

Harry Lundeborg, head of the Seafarers International Union of North America (A.F. of L.) (as quoted in a story in the *Chicago Sun*, March 8, 1947.)

Col. 'McCosmic' Solves a Problem

. . . the dogs begin, not the Byronic deep mouthed welcome but shrill yaps beyond the range of any fife. It occurs to me to send them to feed the hungry people of Europe. A pest would be eradicated in Central America, many would be saved, and the great Amundsen is my authority for the statement that dog chops are preferable to pork chops or mutton chops.

(Col. Robert R. McCormick, owner and publisher of the *Chicago Tribune*, in a story from Acapulco, Mexico, which appeared in his own paper January 30, 1947.)

Law is O.K.—Once in a While

And since . . . it was evident . . . that democracy and universal suffrage were embryonic forms of communism and anarchy we declared that these must be fought licitly—"even by legal means," we said, in order to make it clear, in spite of the censorship that by utilizing legal means . . . we are actually paving the way for those who, dropping all scruples of legality, would some day march toward honor and glory . . . We, therefore, had to fight

words, and hiding behind your idealism, our government would begin to mess up the operation of the solar system.

The laws of the Almighty and of Isaac Newton would be attributed to the vicious party line that connects us with you know where. With civilian and military supervision, of course, we would start to lay a Big-inch to Jupiter, and Schwellenbach would chase the Commies off the moon.

Professor Harlowe Shapley, director of the Harvard University Observatory, in a talk before the Progressive Citizens of America at the Continental Hotel, Chicago, April 12, 1947. (As quoted by the *Chicago Star*, April 19, 1947.)

We Do It For Their Good

The true issue in China is not Communism; it is not Russia. The simple truth is that the Chinese people are waging a struggle to free themselves from the shackles of a feudal Fascist system which for centuries has kept them in a state of semi-starvation and feudal bondage.

The Chinese people are fighting for a democratic republic modeled after our own. It is difficult for them to understand why a country which waged a similar revolution in 1776 is now trying to crush the Chinese in their own fight for independence.

Dr. Herbert Abrams, recently returned from a post with the U. S. Public Health Service in China, in a talk before the Methodist Federation for Social Service at Garrett Biblical Institute, Evanston, Ill. (As quoted by the *Chicago Sun*, January 1, 1947.)

'The Godless Russians'

The local authorities are assisting us in restoring and repairing churches

destroyed by the German invaders, and supplying building materials. Our clergy are provided with all necessities.

There are at present two archbishoprics in Lithuania, those of Vilnius and Kaunas. The Catholic Church organization has remained unchanged. All 711 churches are functioning with their staffs of 1,332 clergy. The Kaunas Ecclesiastical Seminary, headed by the prominent theologian Ventskus, is graduating scores of young Catholic priests annually. Thousands of believers in Vilnius, Kaunas and other towns and villages gather as usual at Matins and Vespers. All established holidays are observed by the Church.

The Most Reverend Msgr. Reinis, Catholic (Roman) Archbishop of Vilnius, in an interview with a TASS correspondent recently. (As reported and quoted by the USSR Information Bulletin, April 30, 1947.)

Only Half The Story

Nearly all the evils of society prevail most where we (Catholics) live and not where Protestants live

It is in rural America where the family life is most wholesome, and where the divorce rate is still low. On the other hand, where the Catholics live, one-half of the marriages end in divorce. It is where they live that the big motion-picture houses are located, the filthy magazine racks, the taverns and gambling halls.

Catholic (Roman) Bishop John F. Knoll of Fort Wayne, Indiana, in a talk before the National Catholic (Roman) Conference on Family Life in Chicago, March 12, 1947 (as reported by the *New York Times*, March 13, 1947, and quoted by *The Converted Catholic*, May, 1947).

In the Question Box

A Word To The Wise

By Speakers Division, 8741-1

"What will be the result to the labor unions if they are abolished by Congress?

"Will Labor wake up to Technocracy or will it remain dumb?"

It is hardly likely that the labor movement will be abolished by Congress. That would not be good tactics. The forces of pro-fascism who are in control of the American Price System now are not that stupid. It is more likely that the program of social reaction calls for a severe restriction of the 'rights' and privileges of the movement. This will be the first step in a larger program to convert the American labor movement into an ally of fascism.

The fascists are moving into many key positions in the labor movement. In order to cover their activities, a big hue and cry is raised about communism. This is a part of the master plan of fascism to capture all North America. Fascism is moving into the fields of education, law, politics, business, labor, etc. The plan of operation is the same in all fields. First: infiltrate and capture the key positions. Second: subvert the institution being worked on from its original purpose or standards to others more suited to the concept of a fascist state. Third: when enough organized confusion and downgrading has been accomplished, then step in and take over all power.

The people behind this plan are what is known as the triple oligarchy. They are composed of vested interests in the fields of clerical fascism, corporate enterprise, and politics, or government. This is the same combination that has downgraded so many civilizations in the past. The

history books reek of misalliances between the nobility, the church, and the money changers. Today these same socially subversive forces operate with new names and more refined methods.

The master plan of fascism requires a smokescreen behind which it can operate safely. The reason is that all of its aims and objects are extremely odious to the true American tradition, or dream, of equal opportunity and the 'right' to pursue life, liberty, and happiness. Therefore, they move in under the guise of democracy brazenly waving the very flag their program will trample in the mud later on. But, this is not enough of a coverup. The people might catch on. So, something must be added.

In addition to the unctuous lip service to 'American Democracy' they need a 'fall guy.' There must be some one to blame, some one upon which to turn hate and prejudice loose. The communists fit this need nicely. They have everything it takes to make them good scapegoats. First: they are agents of a foreign power. Second: they are advocates of violence and political methods of reform and operation. Third: they know little, or nothing, about the physical trends or history of North America.

Hitler and Mussolini chose the communists for scapegoats for similar reasons. The pattern remains the same because the fountain heads of fascism that sponsored Hitler and Mussolini are still the same. The headquarters of fascism is still in Europe, but its main theatre of operations has been moved to North America. One of the chief parties of the triple oli-

garchy in North America, clerical fascism, has much in common with communism. For the most part, it is also an agent of a foreign power. It openly advocates social violence and political methods of operation. And, it knows little about the physical America. In addition it has one up on communism by having a socially reactionary record reaching back to the earliest pages of history.

This seems to matter little in the operation of the master plan for America. The reason they get away with it is because the clerical fascists occupy high and 'respectable' positions in the American social structure. Like Caesar's wife, they are beyond suspicion—almost, but not quite. If there is one thing the average American worships without question, it is SUCCESS. Anybody who has a fat pocketbook, a car a half a block long, or a smooth line of semantic hogwash is the archetype of what every American dreams about being. He will kowtow before this God any time, any place, and for any reason, or for no reason at all except that it's good Price System policy. The average American refuses to believe, no matter what the evidence, that people in high and sanctified places may not be what they seem to be. 'The King (SUCCESS) can do no wrong.'

However, with the communists, it's different. They as a group are at the bottom of the social ladder. They are not SUCCESSES. They do not look anything like the God of Things As They Are. In fact they look, talk and act like something foreign to this sacred concept. Their tactics are the same as those of the fascists, i.e., infiltrate, subvert, take over. The difference is that the communists are not socially reactionary. They are only socially muddle-headed and behind the times for the age in which we live. This puts them on the re-

ceiving end in the current seesaw for position and power. They get damned in advance for everything they try to do and damned afterwards for what little they accomplish. Every downgrading, corrupting, subversive social tactic that fascism is carrying out behind its smokescreen is laid to the communists. They are damned if they do, and damned if they don't. The communists have no comeback. Pot and kettle are both black. So, about all the communists can do is stand up and take it. This spectacle will become more interesting as time goes on.

The organized labor movement, like a lot of other Americans, has fallen into this fascist trap. They are so concerned with the immediate ends and objects that they lose sight of ultimate results. Many locals are so busy with red hunts that they cannot see the black flag of fascism being hoisted in their union halls. This is exactly what fascism wants. The labor movement does not know where it is being led. Pro-fascism is entirely willing to throw a few crumbs in labor's direction anytime it suits the purpose. At the time of this writing (Spring, 1947) voluntary wage increases are being granted to unions by corporation after corporation. At the same time, the most vicious anti-labor bill in American labor history is being pushed through Congress.

Already 13 states have banned the 'closed shop,' 3 States are submitting constitutional amendments to the voters on the question, and in 3 other States limits on the 'closed shop' are in effect, while in 3 States the 'check off' of union dues is prohibited. Labor is unanimously accepting the crumbs and only mildly protesting against the club. One might ask labor if it ever read the story in the good book about Esau who sold his birthright for a mess of pottage?

You are right, my friend. The American labor movement is shortsighted. It has not produced a labor statesman since the days of Samuel Gompers. That leader set the pattern for the American labor movement. It consists of three points, largely. These are: higher wages, shorter hours, better conditions. It was a pattern of operations perfectly adapted to an expanding Price System economy, in which Gompers lived. The American Price System, however, ceased to expand many years ago. Consequently, labor should have adopted a broader and longer range social program. It should have identified itself with the General Welfare of all Americans. This, it has failed to do.

As a result, organized labor has become just another minority pressure group within the framework of the Price System. It fights solely for special advantages for its members. These can only be acquired under the Price System at the expense of other minority pressure groups or of society as a whole. By this token, organized labor has alienated itself from the main stream of American hopes and aspirations. It stands, in splendid isolation, wide open to every economic and political storm that blows. Is this good labor strategy?

There are about 55,000,000 legitimate workers in the American labor force. About 15,000,000 of them are lined up in organized labor. At least 40,000,000 are unorganized. To be sure, 15,000,000 is, potentially, a powerful minority group. That presupposes, however, that they are correctly led. Also, we must remember that these 15,000,000 workers are not owners. All they have to sell is their labor power. Under the Price System of trade and commerce, technology is manipulated so that hourly wage rates will never catch up with increases in

output per man-hour. The market for labor power is a diminishing quantity. One might ask labor whether the dog wags the tail, or whether the tail wags the dog?

Technocracy has no quarrel with organized labor. It has pointed out on many occasions that the organized bargaining power of unions is necessary, under the jungle law of Price System operations. Every worker, if he is smart, will belong to a union. All the owners have unions, don't they? Well, it's only common sense. It's the best way to obtain immediate economic benefits. However, there is a longer range objective which is supremely important to labor also. That is nothing less than the General Welfare and common good of all citizens. In the end, organized labor will rise or fall with that. The possibility of the General Welfare being realized is just what fascism is trying to kill off. Yes, labor is tactically smart but strategically stupid.

If organized labor does not wake up to this higher concept of citizenship soon, it is going to be too bad for the unions. They will become converted into stooges for a fascist state as they were in Germany and Italy, and as they are in Spain and Argentina. Organized labor must purge its ranks of native fascists. The more 'respectable' they seem to be, the more dangerous they are. Organized labor must stop being led around by the nose in idiotic red-hunts against a non-existent communist menace. Does labor have enough brains and guts to do this. It remains to be seen.

Communism is no menace in North America. Fascism is. Communism may be sufficiently radical for European conditions; but it is too bourgeois for America. It is hopelessly inadequate for the social change required here. North America's problems will

not yield to social violence, political methods, or foreign ideologies of either the left or right. There is only one way to combat communism on this Continent. That is to adopt a more revolutionary social doctrine. This will also defeat fascism. There is only one Body of Thought native to the soil of North America that fits the bill. That is Technocracy. It has everything. Technocracy is at one and the same time the most truly conservative and the most utterly revolutionary social movement in existence.

Technocracy is anti-fascist. What is more important, it is also anti-Price System. This is the basic requirement for social change. No other social movement meets it. The Price System of trade and commerce is the root cause of most of our modern so-

cial problems. Ergo, abolish the Price System and we clear the way for a solution of our problems. That is the revolutionary part of Technocracy. The conservative part appears as follows: Nearly all the worthwhile things in our modern American culture came about as a result of the advance of Science and Technology. Technocracy seeks to conserve and enhance these things. These facts require a little study to understand. The Body of Thought of Technocracy is an open book. Every citizen is invited to join Technocracy and investigate it from the inside.

Organized workers everywhere in North America are invited to join. Technocracy is non-political, non-sectarian, and non-profit. A word to the wise is sufficient!

Labor—Take Notice

Two new machines which will affect the jobs of thousands of telephone workers are underlying causes of the telephone strike according to Raymond C. Brantner, vice-president of the Federation of Telephone Clerks of Illinois. One of the machines handles long distance calls, 'automatically recording the number from which the call is placed, the number being called, length of the call and the charges. It then debits the account. The data is then automatically played back to an even more complex device which makes a complete bookkeeping entry of the call.' The machine is now being tested in Pennsylvania.

'We're striking for a great deal more than \$12 a week. We are striking for our very existence,' said Brantner. If the machine is placed in use there will be no 'jobs for toll billers, sorters,

checkers, rate clerks, bookkeepers, ledger clerks, filing clerks and balance finders.' The other machine being tested in Rochester enables a person to dial other cities without an operator handling the call. (*Chicago Daily News*, April 7, 1947.)

The prefabricated housing industry produced 37,200 units in 1946. Production for 1947 is estimated at 100,000 or more units. Prefab manufacturers are stepping up production rates despite many obstacles. Among these are: 1. Local building code restrictions; 2. Opposition by local builders; 3. Opposition by labor unions; 4. Lack of qualified dealers; 5. 'FHA sluggishness in approving loans on prefab homes;' and 'public proneness to regard prefabs as "temporary homes."' (*Wall Street Journal*, March 18, 1947.)

NOTICE

To Our Readers

If you will send in seven names to 'Great Lakes Technocrat,' together with a one dollar bill we will mail each one a sample copy. 7 for \$1.00.

Facts in a Nutshell

Orders for new generating equipment now exceed 13,000,000 kilowatts. 'Present utility generating capacity is about 63.2 million kilowatts,' according to H. S. Bennion managing director of the Edison Electric Institute. 'Based on estimates from a cross section of electric companies, the growth of the load of the utility industry in 1947 is expected to be slightly over 3 million kilowatts and the growth of the load in 1948 approximately the same. This is double our former notions of the normal rate for growth of load,' said Mr. Bennion. (*Wall Street Journal*, April 3, 1947.)

Production of Rototillers, which plow, disc and harrow in one operation was begun on April 1, 1946. Since then 30,000 units have rolled off the line and were sold. (Release of Frazer Farm Equipment Corporation, April 14, 1947.)

A Twentieth Century Fund survey points out that large-scale soil conservation and land development programs could increase agricultural production by 50 percent.

Public eating places account for the sale of one-third of all farm products (from release of American Dairy Association).

Nearly a third of the cost of distributing goods is accounted for by retail trade, says a Twentieth Century Fund investigation.

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In The Question Box

Science of Society

By Speakers Division. 8741-1

How much of communism has Technocracy in its program? E. W. D.

The answer is none at all. Communism consists of a body of moral philosophy employing the customary political and financial methods of a Price System in a new way so as to bring about the more equitable division of a natural scarcity. It is a variation of the ancient Price System for the benefit of a greater number of citizens.

Technocracy consists of a body of scientific concepts employing non-Price System, technological methods for the distribution of an abundance. It is not a variation of the ancient system merely for the benefit of a greater number of citizens but a complete abandonment of it for the higher welfare of ALL citizens.

Communism and Capitalism

In order to distinguish between communism and Technocracy it is necessary to understand the similarities and differences between communism and private capitalism.

Communism, being just another type of Price System, is as valid and workable a system as private capitalism in any area where natural scarcity prevails. History records cases of the successful operation of both systems.

Both systems are concerned with the manipulation of scarcity. Communism functions to divide it more equitably. Private capitalism functions to exploit it inequitably. Thus, we see that the functional difference between the two systems is moral in character.

Private capitalism is organized solely

to exchange goods and services by methods of buying and selling on a basis of value. The value is determined by the relative scarcity of products. It is expressed in terms of a price. The medium, or vehicle, for carrying on this exchange is money and transactions are carried out so that a profit accrues to the seller. This profit is then channelized into private hands for private purposes.

Communism uses identically the same methods and system of trade and commerce. The difference is that it channelizes all profits into the government treasury for public purposes. It can be said that communism is a type of public capitalism exercised for public purposes; while orthodox capitalism is a private system exercised for private purposes. Thus, we see that the operating difference between the two systems is in the question of who gets what.

Communism claims to reflect a specific or implied mandate from its human components to do something about social conditions. Private capitalism claims a mandate from the moon and two thirds of the entire universe. Actually it represents nothing but itself and the human components concerned are only a part of its stock in trade. Thus, we see that communism and private capitalism are two different stages of development of the same fundamental system. However, they are both Price Systems.

Technocracy

The basic difference between communism, private capitalism and Technocracy is that both of the former

systems are variations of a Price System organized to manipulate scarcity, one equitably, the other inequitably.

Technocracy is not a variation of the Price System. It is a complete abandonment of it. It is not just another way to manipulate scarcity. It is an engineering design for the distribution of an abundance.

Since natural scarcity does not exist in North America any longer neither communism or private capitalism can operate validly here now. That is why communism is out of order on this Continent. That is why private capitalism has been living off the government for the last two decades. That is why a scientific social system such as Technocracy proposes is the only valid system for this area now.

Social problems in areas of natural scarcity are political, financial and moral in character. In areas of potential abundance they are technical in nature. That is why all Price System attempts (whether of the left, right or center) to solve social problems in North America are futile.

Potential abundance, in any area, is signified by the possession of sufficient resources plus a stage of technological development capable of producing abundance from those resources. As yet, only one area on earth, North America, has both of these qualifications.

Goods and services must be less than abundant in order to possess exchange value so they can be manipulated. Consequently, it is not possible to manipulate an abundance either equitably or inequitably. All that can be done is to distribute it or destroy it. When you destroy it you enforce an arbitrary, artificial scarcity. This can then be manipulated the same as natural scarcity. That is what the American Price System has been doing for the last two decades while living off the government.

It is not possible to divide an abundance of anything equitably. This is because abundance does not mean almost enough or just the right amount. It means an overflowing quantity. This is an indeterminate amount. How can you divide that? How divide the air that blankets the earth? How divide the sunshine on a bright summer day? How divide the ice at the North Pole? The answer is you can't divide an indeterminate quantity. All you can do with air or sunshine is to provide or refuse access to it.

That's the way it is with goods and services where they are potentially abundant. You can not divide them. So that rules out all political, financial and moral philosophical methods. All you can do is provide access, i.e., make the goods and services available to all citizens on equal terms. This is what is meant by distribution. Consequently, if you decide to distribute the abundance in this way you must set up a social-industrial mechanism designed for that purpose. This fact is what makes North America's social problems technical problems.

Although it is not possible to divide an abundance equitably it is also not possible to distribute it any other way except equitably. This is not because of any considerations of 'right' or 'wrong' in the design of distribution. It is because that is the only way the factors will add up. It is the only way the design can operate. Its equity resides in the fact that all citizens have access to the abundance on equal terms. Could anything be more equitable than that?

For thousands of years moral philosophers have inveighed against the selfishness and greed of men. They tried to persuade them that the motivating force in human affairs should be equity, unselfishness and brotherly love. At the same time these same gentlemen participated in upholding

a social system (the Price System) that made such a code of conduct physically impossible.

Then along came Pappa Karl Marx. He worked out a new approach to this ancient problem. His idea was to substitute compulsion for persuasion. Then men would have to be good whether they liked it or not. The exploiters would all be liquidated; liberty, equality, etc., would prevail; and the tyrannical STATE would gradually wither away under the beneficent sunshine of a 'dictatorship of the proletariat.' But, Alas! Pappa Karl's plans called for the use of the same Operating Rules of the same old social system that had made the job impossible before. It's just too bad.

Today we are harangued from all sides by disciples of both schools of moral philosophy, persuasion and compulsion. Social problems are less amenable to either moral suasion or coercion now than ever before in human history. Yet, this fact does not discourage the moral philosophers. They fare forth in legions, firmly mounted on the dead past and armed with an unlimited supply of social stupidity. May they have happy hunting in their endless search for the magic grail that makes all men brothers under a Price System. It will take SOME magic. For, as long as the Price System lasts, whether communism or private capitalism, there will be very little equity, unselfishness or brotherly love permissible in human affairs.

If we wish to see these desirable conditions brought about it is necessary to scrap the methods that they failed for thousands of years. Instead we must employ the method that in less than 200 years has created all the worth while things in modern civilization. This is the scientific method. In this approach equity does not appear as a primary motivating

force but is realized as a result of the application of scientific principles.

Edison didn't use equity to develop the electric lamp. Yet, it casts its light over sinner and saint impartially. Bell didn't use equity to devise the telephone. Yet, it is available to all without partiality. The same power that burns the life out of a man in the electric chair may also warm a baby's bottle, or bring soothing heat to an invalid's bed. The power doesn't stumble and falter over considerations of equity. It is completely impartial to all and being thus it is completely equitable to all.

In the case of entire social systems the same idea holds. Equity appears as an automatic after-effect of the application of technological principles to social problems. It is a direct result of correct social engineering. Like the fabled Shamrock of Ireland it can be found nowhere else.

If we define equity to include all the hopes and aspirations of men that have died aborning ever since history began we can readily see that the only way they can be realized is by the application of Science to Society.

That is what Technocracy is, the Science of Society. If you can see any communism in this program you have better bifocals than we have, Mr. W. E. D.

Machines Make Jobs

'Leading manufacturers of locomotives in the United States have recently laid off between 4,000 and 5,000 men in their steam locomotive divisions, Dow-Jones News Service said today. As a result of the swing of American railways to the Diesel-electric locomotive, orders for steam locomotives have fallen to the lowest level in years.' *Chicago Daily News*, May 14, 1947.)

NOTICE

To Our Readers

If you will send in seven names to 'Great Lakes Technocrat,' together with a one dollar bill we will mail each one a sample copy. 7 for \$1.00.

Facts in a Nutshell

'The New York Central Railroad today disclosed it has placed orders for 70 additional diesel-electric engines . . . When deliveries on its new order are completed the railroad will have 158 diesel-electric units . . .' (*Chicago Tribune*, April 29, 1947.)

'A three-ton slab of steel (30 inches wide, 150 inches long, and 5 inches thick) can be rolled into a 750-foot length of sheet steel (30 inches wide and 0.080 inch thick) in 90 seconds in a recently constructed continuous hot strip mill. (*Steel Facts*, August, 1947)

In 1899, says a Twentieth Century Fund survey, electricity provided 5 percent of the power used in manufacturing. Thirty years later, it provided 80 percent of the power.

According to a Twentieth Century Fund report, used houses on the average account roughly for three-fourths of annual residential sales.

In March, 1945 a special committee was appointed in Massachusetts to study the liquor problem. After an exhaustive study the committee reported that for every dollar the state collected in liquor taxes it spent \$4.68 to take care of victims of this type of free enterprise. (*Labor*, June 21, 1947.)

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In the Question Box

Prepare for My Coming

By Speakers Division, 8741-1

Would Technocracy's position be advanced to any degree by having more really good men and women in America?—R.E.B.

In the letter which accompanied this question, R.E.B. writes that he had just listened to a sermon, the theme of which was that America's greatest need was more good men and women. After church was over, R.E.B. said to a friend that 'without a change of our social system good men and women could not accomplish anything of importance.' The friend countered by saying: 'Well, how are you going to bring about social change unless there are good men and women to do it?' Out of this deadlock came the above question.

First off, we must point out that Technocracy is not interested in advancing its own position. It is interested in advancing the position of America. Technocracy has nothing to gain. It will rise or fall as America rises or falls. Therefore, the question really revolves around this point. What good are 'good' men and women to America?

The word 'good' is such a general term that in the absence of a precise definition it is impossible to tell just what type of 'good' is meant. What is 'good' for the fox is not 'good' for the rabbit, and vice versa, and so on. The fact is that the whole idea of 'good' is not a real concept describing a thing or event in the external world. One cannot go to the store and buy a pound of 'good.' It doesn't exist as an entity. In the traditional, moral sense, 'good' is an arbitrary, abstract, philosophical concept, revolving around

human attitudes and behavior patterns. It takes many forms, varying with time, geography, traditions and folkways.

The Western World has been trying to manufacture 'good' men and women for 2,000 years. Our production curve has never risen much above zero. Nevertheless, we're still hard at it in spite of the long-known fact that the nature of our social system, the Price System, makes the job impossible. Honesty, humility, fair dealing, and nearly all the virtues of the traditional concept of 'good' are in conflict with the Operating Rules of the Price System. On one hand we dream up an abstract concept of 'good.' On the other, we set up a real social system that places nearly all of its rewards upon the exercise of a set of behavior patterns in opposition to that concept. Then we bewail the wickedness of human nature and wonder why there are not more 'good' men and women to set the world right. It is high time that we cease this infantile habit of piling futility upon futility. This is the Power Age! It is high time to adopt the scientific approach.

If, in relation to the social problems of the Power Age (and that's what this is about), we define 'good' as that set of behavior patterns and type of social control which is most beneficial to the General Welfare and the individual, we may discuss the question intelligibly. Starting from that definition, then, we would have to analyze our whole social system and all the known factors of America's social problem in order to deter-

mine what is 'good.' We would weigh those physical factors which contribute to the General Welfare against those which are opposed to it. This is a process of measurement. Consequently, we are not setting up an arbitrary, abstract, philosophical concept, but uncovering a set of principles inherent in the data. This is the scientific approach to social problems. In other words, we would let the facts dictate what is 'good' for the General Welfare. Our scientific approach and concept of 'good' becomes then a real concept, directly related to things and events in the external world and operating in harmony with physical laws. This is in contradistinction to the philosophical approach to social problems and the traditional concept of 'good' which, arising as they do out of subjective introspection, is more often than not in direct conflict with opposing forces in the external environment.

These external forces are what determine man's attitudes and behavior patterns. With but few exceptions, people do what they are conditioned to do by their environment. Men do not make events. Events make men. R.E.B.'s friend is totally in error in assuming that social change cannot be brought about unless there are 'good' men and women to do it. People do not create social change. They adapt themselves to it, or else perish. Social change is caused by environmental factors. In North America these are the impact of Science and Technology. They are here, they are operating, and they are irreversible. When conditions are right, social change will ensue as inevitably as the Seasons of the year turn from Spring through Summer to Fall and Winter. We do not create the procession of the Seasons; we do not try to turn them backward; we do not rail against the inflexible course of these physical events. All we

do is adapt ourselves, or else perish. In the Summer, we change our diet and wear lighter clothing. When it rains, we wear a raincoat. In the Winter, we eat more and wear heavier clothing. It is not a question of 'good' at all. It is a question of adaptation. We prepare ourselves for the weather changes that we know are certain to come. We survive by exercising sane reactions.

Here is a common set of attitudes and behavior patterns that are not based upon subjective introspection. They arise out of the relationships revealed by the data of experience. They are not consciously 'good' in the traditional sense, yet they are definitely beneficial to the individual and the General Welfare. The same idea applies in relation to social change. It will come, willy-nilly. We cannot stop it. We cannot turn back the clock. If we oppose it, we will be swept aside.

The best thing to do, then, is to adapt ourselves and our system to the coming change and to direct it into channels beneficial to the General Welfare. Thus we may survive by exercising sane reactions.

One more point remains. R.E.B. is also off the beam in saying that 'without a change of our social system "good" men and women could not accomplish anything of importance.' It is a misconception to imagine that social change will come first and that 'good' men will then be able to get busy afterward. If the so-called 'good' men and women of America don't get busy and accomplish something now, in preparation for social change, they won't even be able to accomplish their own survival afterward. Social change can be accompanied by social violence, unless we are prepared to avert it. Fire, famine, disease, battle, murder and sudden death do not spare the

'good,' They go down first while the tough, alert, unscrupulous and lucky survive. It is not written anywhere that Santa Claus is going to pass out the Technate on a silver platter, while all the 'good' men and women of America sit comfortably on their collective social brains waiting for an auspicious time to 'accomplish something of importance.' THE TIME IS NOW!

What has to be done is strictly educational in character. We don't have to venture forth into the unknown. All we have to do is study and propagate that which is already known. The Design of the Technate is the synthesis of the American social problem. It was not dreamed up out of subjective introspection. It arises out of the technological nature of American culture. The schematic form of the Technate is already decided. It was inherent in the data. It will work only in one way and that way has been determined by physical laws. Thus, the Technate projects, in advance, its own polity of organization, administration and control. All this has been uncovered from a study of the elements of the problem. It has been accomplished. The spade work is done.

What remains to be accomplished is of the highest importance. It is to

PREPARE — PREPARE — PREPARE! That is what Technocracy is doing. Technocracy is neither causing nor advocating social change. It is preparing for the inevitable, so that North America may progress forward to that higher form of culture that is the only alternative to the hell of social fascism.

Which do you want, American fascism or American technology; hell on earth or a social system that will make it possible for you to love your neighbor and/or be your brother's keeper? There will be no other choice. Which is 'good' for the General Welfare? There is only one correct answer. When you find it, you will cease being only an amorphous 'good' man or woman, wandering and wondering in a wilderness of abstract concepts. You will become a good American, with a definite objective and a high concept of citizenship. We may conclude, then, that what America needs most is not more just 'good' men and women but more alert, intelligent, capable citizens with the right kind of good will, who understand the problem. That is the only way the position of America can be advanced. If you want to call that 'good,' we won't fight about it. The correct term, however, is scientific.

Try and Get It Now

'The scarcity of soap in Europe has led a statistician to get out some curious figures. In Great Britain the consumption of soap went up from 90,000 tons in 1815 to 500,000 tons in 1935 and the death rate per 1,000 fell from 32 to 12. In five leading European countries the consumption of soap per head is in exact proportion to the fall of the death rate. Many will be surprised to learn that of

these five countries France uses least soap and has the highest death rate.' (*American Freeman*, November, 1946 issue.)

* * *

'U. S. Consumption of soap amounts to almost 10 million pounds a day or 26 pounds a year per person.' (*Regional Commerce Bulletin*, March 17, 1946.)

No Comment

Speaking before the Kenora Rotary Club in Kenora, Ont., August 6, 1946, Attorney General George F. Barrett of Illinois urged that Canada sever her ties with the British Empire and ally herself politically with the United States.

'If there was ever any justification for the Bond between Canada and the British Empire, I submit that it has long ceased to exist,' he said.

'As one great nation we would be an invulnerable fortress in a chaotic and troubled world—a bastion which would be impregnable to attack.' (*Chicago Sun*, August 8, 1945.)

'The shortest route to the brain is through the optic nerve.'—Thomas Edison.

No Connection

I have been bawled out, balled up, held up, held down, hung up, bulldozed, blackjacked, walked on, cheated, squeezed, and mooched. Stuck for war tax, 20 percent profit tax, state tax, dog tax, and syntax; War Bonds, and the bonds of matrimony; Red Cross, green cross, and double cross; asked to help the churches, the American Legion, Emergency Relief, War Relief, stomach relief, and all the reliefs. I have worked like hell and have been worked like hell; have been drunk, and got others drunk; lost all I had, the banks took me for a ride, the depression cleaned me again, and now, because I won't spend and lend all the little I earn and go beg, borrow, or steal, I have been cussed, discussed, boycotted, talked to, and talked about, lied to and lied about, held up, hung up, robbed and damned near ruined; and the only reason I am sticking around now is to see what is next on the list.—(Anonymous.)

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flow becomes automatic and operations are maintained at these temperatures. It requires about a week of constant alternations of air flow to reach the producing point temperature in the pilot plant. Hendrickson says that it will probably require a full-sized commercial plant one month to be heated up.

Nitric oxide is recovered directly from the air at both the bottom and top outflows. The Wisconsin process does not make ammonia. Thus, it will

not come into competition with war-built ammonia plants, nor with nitrogen fixation plants using the Haber and Ostwald processes which produce ammonia. Rather, these older methods will find themselves in competition with the Wisconsin process in nitric acid production for explosives and nitrogen for fertilizers. Hendrickson is now planning the commercial development of the process. Pending Patents are held by the Wisconsin Alumni Research Foundation. A low royalty charge has been promised.

'There Was Once a Little Animal'

The history of the tractor dates back to the introduction of the reaper in 1831, when there developed a need for more power on the farms than could be provided with the oxen and mules then used. Steam was the first power to be tried, and in 1858 a steam tractor was in use; by 1888, 38 companies in the United States were making steam tractors. In 1876 the Otto cycle internal-combustion engine was patented and by 1889 it made its first appearance on a tractor.

The first track-tractor—endless belt motivation—came in 1905 after wheels up to eight feet in diameter and eighteen feet long had been developed to obtain traction in the California peat soils. After this development tractors began to displace work animals on the farms and began to be used for road building and maintenance. Gas engines gradually gained acceptance, displacing steam power which was at a peak in 1910. At this time they were commonly used on the farm as auto-portable power plants for threshing machines.

At the end of World War I work animals were at their peak. Figures for the United States as a whole show 26,436,000 work animals on farms in 1919 against 147,600 tractors. Beginning with 1919, there has been a steady replacement of work animals by the tractor.

Introduction of the general-purpose tractor in 1923 was the beginning of a trend towards elimination of all work animals from farm chores. By that time in the United States there were 447,000 tractors on farms against 23,645,000 work animals. As compared with 1919 figures, this change amounts to substitution of one tractor for eleven animals in a four-year period. In 1930, almost a hundred years after the invention of the reaper, 846,162 tractors were working for the American farmer.

In 1931, Diesel engines were first used on tractors. Despite higher original cost the Diesel found a place on the large farms where it could be intensively used.'—(*Illinois Business Review*, June 1946).

In the Question Box

Change or Change-Over

By Speakers Division 8741-1

Must the change to Technocracy be sudden or can it be brought on gradually? E. A. R.

The answer is that it will be both. Perhaps we'd better explain.

There is an old saying that has stymied the thought processes of a lot of people. It is to the effect that: 'Sudden changes are never profound, and profound changes are never sudden.' Like most philosophical conclusions, it obstructs the road to clear thinking. We suspect it is lurking in the background of this question.

Death is a sudden change, yet it is quite profound. The birth of a baby is a profound change (for both baby and mother), and it is often sudden. Yet, any physician can tell you that a person begins to die shortly after he is born; and that a nine-month long process of gestation and development is necessary to effectuate birth.

There are thousands of other examples wherein the 'change' we usually think of as occurring suddenly actually doesn't occur that way at all. What happens is that there are causative factors and a process of accelerating development at work behind the scene. These factors and this process are the *real* change. The phenomena we look upon as being 'changes' are actually but events marking the transition from one stage of development to another. They are the periodic culmination points of a process.

There are some exceptions to this, perhaps, as in the case of biological mutations, wherein a new type suddenly appears for no known reason. However, we are not concerned with the fine points of evolution. Our sub-

ject is social change, and there are no cases on record where a civilization suddenly mutated from one stage to another for no known reason. In fact, the Price System type of social order has been all but world-wide for as far back as written records go. All during this long period, there were causative factors and a slow process of development at work behind the scenes producing widely interspersed, transitional events (changes) from one stage of development to another.

One might list the earlier of these events as the discovery of fire, invention of the wheel, domestication of plants and animals, discovery of the principles of the lever, wedge, inclined plane, etc. By and large, however, the process of development accelerated but slowly, for ages. Civilization remained at a low handicraft-agrarian level; and there was little alteration in the way man lived. As time went on, the causative factors behind the process of development gathered force. Among these were environmental factors, population pressures and the growth of scientific knowledge. Eventually the accompanying process of development accelerated to a major transitional event (change) and the steam engine was invented.

That peak is usually marked as the beginning of the Industrial Revolution. This is still going on, gathering momentum all the time. It is a unidirectional process of development that has already produced a number of major transitional events (changes). Some of these might be listed as the locomotive, internal combustion engine, steam turbine, electrical gener-

ation, steamship, airplane, telegraph, telephone, radio, atomic power, etc. But why go on? The list grows longer, and the transitional events (changes) from one stage of development to another occur with increasing frequency as the Industrial Revolution advances. Each and every event in this growing series points toward the invalidation of the Price System. Collectively, this tendency may be called the trend of events.

The process of development in North America has accelerated its pace rapidly from the ancient leisurely tempo. In the last generation it has reached the boiling point. Today it is threatening to boil over, almost anytime now. The Price System is incapable of doing anything about it. The trend of events is inexorable. It feeds on itself. The Industrial Revolution ushered a quantitative change into human society. When any quantitative change proceeds far enough, it becomes a qualitative change. That is what we are facing today.

The causative factors and process of development behind the scene are now operating at a much greater order of magnitude than before the war. Social change resulting therefrom has, however, been restricted to partial adaptations on the industrial side of society. It has often been said that we now live in a different world than did our grandfathers. This is only partly correct. Industrial production today is carried on by technological methods and principles of control. But we still cling stupidly to all the decaying social institutions and methods of control evolved during long static ages. We refuse to alter or adapt them to a higher stage of development compatible with the trend of events (direction of social change).

This differential of development is the root cause of our social problems

in North America. It sets up new, insoluble and growing social tensions, unbalances and problems. These create an increasing pressure for overall social change. Some of these days, soon, the lid will blow off, or, to put it another way, the Price System will collapse because of its inability to adapt itself to the trend of events. What will happen at that point is that our entire social system will have reached the last culmination point of its dual process of decay and development. The resulting transitional event (change) will probably be sudden, profound and permanent, one way or the other.

We say 'one way or the other' because there is no guarantee that the collapse of the Price System, as we know it today, will automatically project America into a higher stage of development. It is possible to go backwards, also. Please remember that fascism is hard at work in North America. If it gets into control, there will be hell to pay all around. Thus while we know that this major event will occur, there is no certainty that it will result in a change to technological methods of social control. It all depends on what we do about it now, before it happens.

The change to Technocracy has been going on (right under our noses) for a generation, in that the trend of events has inclined that way. The critical point will be reached when it becomes necessary to make the change-over from the Price System or else revert backward. At that point a fool-proof social technique will be sorely needed. Technocracy has already analyzed this problem and blueprinted the solution. The decay of the Price System and its collapse can be channelized into a long step forward and upward to a higher civilization.

That is the job Technocracy is working at. It is preparing for that social change which is the manifest destiny of North America's technological civilization. It will be a change from insecurity, artificial scarcity and in-

equality of opportunity to abundance, distribution, security and equality of opportunity for all citizens. What more can any one ask for? Why not pitch in and help?

Looking for a Job?

Here is a concept for a Continent worthy of America's special ability to act and to perform. Worthy, because it will guarantee our Security of our capacity to function; for the twentieth century belongs to the Continent which first installs its own security and abundance. Technocracy's specifications for North America's Continental Hydrology, together with such other specifications as the Energy Certificate, Technocracy's Flying Wing, etc., will guarantee security and abundance for you and for me.

Here are some of the main features of this Hydrology:

The St. Lawrence River is the highway to the sea of the greatest water system on earth. The Great Lakes water system is a natural water highway possessed by no other continent. From these great inland fresh water seas in the heart of the Continent, modern engineering, when unhampered by the interference controls of the Price System, will construct water highways to the Mississippi, the Ohio, the Hudson, Lake Winnipeg, and points west, and to the Hudson Bay by man-made Lake Albany.

Seventeen miles north of St. Louis, the Missouri flows into the Mississippi. Two thousand four hundred ninety miles northwest of there, where the Jefferson, the Madison and the Gallatin unite at Three Forks, Mont., there is the spot of importance, for it is only a short distance from the sources of some of the rivers which flow into the mighty Columbia River.

Technology knows how to connect this spot with the Columbia River through its tributaries. Technocracy's Continental Hydrology is a huge project dwarfing even the proposed Ichang dam project in China. In addition to waterways this Continental Hydrology involves establishing a Continental electrical transmission system of one million volts d.c.

Technocracy makes it quite clear that the fundamentals of design of waterways, comprising the Continental Hydrology, is a total departure from the limitations of European and Asiatic canal systems and also from the proposed politically-sponsored river development systems before Congress.

Technocracy recognizes that this North American Hydrology will naturally be violently opposed by the railroads, banking houses, existing export and import shipping firms, by the vast interests under fascist domination. Just as likely the small merchant, the transient crop picker, the housewife, will share such opposition because the butcher, the baker, yes, even the lonely candlestick maker, will tell them to. Fascist domination, political maneuvering, is everywhere, lurking in the guise of 'democracy.' How can any one of us have real democracy within the framework of enforced scarcity? Within the framework of deliberate economic sabotage? Within the framework of painstakingly guided deception, superstition and crime?" — (*Technocratic America*, July, 1946).

In the Question Box

By Speakers Division 8741-1

1. How many people are Technocrats?
2. If Technocracy is adopted, just how will those who centrally administer the Technate be chosen?
3. Why shouldn't Technocracy's benefits be extended to the whole world? C.G.B.

These three questions are often asked of Technocracy speakers. Let's take them in rotation. First, as to the number of members. The reason Technocracy doesn't stress its numerical strength is because that attitude is Price System bandwagon psychology. A great many people think that if enough other people are swallowing a certain line of guff, there must be something in it. Americans are great multipliers. They love to add a little bit to a story before they pass it on. They are also great joiners. Almost any ideology that promises enough can find an army of followers.

The political and social history of U.S. is replete with world-saving movements that waxed prosperously for a brief day, and then waned into oblivion. Where are the more than 600 pseudo-Technocracy organizations that arose in the early 1930's? They sprang from the financial brains of racketeering promoters to exploit the nation-wide and world-wide social impact caused by the real Technocracy. They have gone the way of all other four-flushing movements in our national history, leaving behind them, by their lying misrepresentation, an epitaph that spells out only a bad legacy to handicap the real thing.

There was only one Technocracy then, there's only one now and there'll only be one in the future. Technocracy refuses to clown to satisfy the milliard-headed army of moronic joiners and followers. It refuses to cater to Price System psychology or employ Price System methods. Among these are a long list of names of illustrious jackasses on your letterheads, testimonials from great and near-great stuffed shirts, and an imposing roll of memberships. All these signify only zero, multiplied over and over.

The point is NOT HOW MANY are the Technocrats but HOW CORRECT are they? If you are the only one who is correct and everybody else is wrong, you are a majority of one. Men do not make events. Events make men. Nations and cultures do not make events. Events make nations and cultures. Physical events are precipitating North America into a major social crisis from which it will either go backward into a modernized version of medieval Authoritarianism or go forward to a higher form of civilization.

Our job is to find enough alert, intelligent citizens, and educate them about the physical trends so they can direct our beloved land into a higher culture. It won't take so many. There is a pool of Americans who have not been too badly contaminated by the Price System. Let's find them. By this time you will have guessed that this writer either doesn't know how many Technocrats there are, or he doesn't want to tell. Both guesses are correct. If he knew, he wouldn't tell, for the above reasons and many

more. The fact is, however, that he doesn't know. He'll go you even one better. He doesn't give a hoot in hell how many there are. It's the idea that counts.

Your second question is answered in the *Technocracy Study Course Book*. Study Lesson 21 carefully, especially page 229, and you will know as much as this writer does. If you do not have the book, a copy may be obtained at nominal cost from your nearest Technocracy Section.

Your third question takes us into the international field. Before we can summon the gall to offer Technocracy to the whole world, it might be a better idea to install it in North America and get it operating here. Then we would be in a position to make a definite contribution to world improvement. At present we're not. To this writer's knowledge, no official statement has ever been issued by Technocracy that it intended to isolate North America from the world.

The reasons why Technocracy puts the accent on North America are that this Continent is our home, and also because Technocracy's analysis and synthesis was made on the basis of physical conditions here. However, the trend of world events affects North America and is constantly taken into account by Technocracy. What more can any one ask? One thing is sure. Technocracy is not in favor of the rest of the world first and America last. Technocrats are not agents of any foreign power. They are North Americans, first, last and straight down the middle. If we *really* want to help the whole world, the best way to do it is to clean out our own Augean stable first. Don't you agree?

Can I, with only a little time, a little education, and little energy become a Technocrat?

M. A. C.

The answer is most decidedly yes. If you are a responsible citizen from any walk of life or economic level and desire to advance the program of Technocracy, you are eligible. Regarding your three self-proclaimed limitations, let's examine them, one by one. First you say you have only a little time. The point we wish to bring out is that no one has any more time than you. Arnold Bennett put it this way:

You wake up in the morning and Lo! your purse is magically filled with twenty-four hours of the manufactured tissue of the universe of your life . . . No one receives either more or less than you receive. Waste your infinitely precious commodity as much as you will, and the supply will never be withheld from you. Moreover, you cannot draw on the future. Impossible to get into debt!! You can only waste the passing moment. You cannot waste tomorrow, it is kept for you.

Try keeping a budget of your time for a week. Draw a simple chart, divided into quarter hour periods to cover twenty-four hours and seven days. Carry it around with you and every hour or so mark down in the correct time space what you were doing. At the end of the week, total the various items, such as time spent in working, eating, sleeping, necessary domestic duties, movies, etc., etc. You will be amazed at the low load factor on your time devoted to socially useful items. We're not trying to preach at you. After all, you know, time can be measured.

As a second limitation, you say you have only 'a little education.' What a fortunate man you are. Price System education is mostly mis-education. Except in the technical and

In the Question Box

By Speakers' Division, 8741-1

Will the use of atomic energy for commodity production change the energy value of units of that commodity? B. R. S.

Not at all. Energy is energy. There is only one kind of energy, whether it is derived from the molecular fission of coal, oil, gas, or wood, from the power of falling water, from the radiation of the Sun, from the movement of winds, from the muscles of man or beast or from the fission of the atom.

Energy is the capacity to perform work. Regardless of the source, or form, from which it is derived it is all measureable in the same units, such as ergs, joules, foot pounds or kilowatt-hours. The energy may be converted from one form to another and the yardsticks by which it is measured are constant and also convertible into each other.

In a system of technological control, wherein physical costs of accounting are used, the cost of a commodity would not be determined by the particular form of energy used in its technofacturing. It would be arrived at from calculations based upon the total amount of all forms of energy available, minus the necessary deductions for maintenance and replacement of machinery, costs of distribution, etc. The amount of resources available for the production of any commodity would be a factor in its physical cost also. The only effect that atomic energy has in this picture is to add to an already abundant supply of energy. You might say there has been a quantitative change, but no qualitative change. Energy is energy.

Would it be easier to put a Technate program in to effect in a socialist country where production is used for all of its citizens, M. E. D.

The putting of technological control into effect in any country does not depend upon the state of its political ideology, but upon the state of its technological development. Obviously, you cannot put technological principles into effect in any country where there is little or no technology. In industrially backward areas, political, business and ecclesiastical methods of social control are used. Technological control is a technical and measureable method of operating a social system. Before this can be done, there must be something to measure. You can't measure natural scarcity. All you can do with it is evaluate it. When an area is gifted with sufficient resources and attains a degree of technological development, making possible the production of an abundance, then technological control becomes practical and not until then. So far, only the North American Continent has reached that state.

How can Technocracy take effect when the ownership of the means of production are in the hands of a few who are strongly entrenched with police, army and navy at their disposal, B. J. G.

I wouldn't worry too much about the police or the army and navy. That is thinking in concepts of the seizure of power. Technocracy has no theory about the assumption of power. Every government rests upon force. In the last analysis that force depends upon common consent. It has been demon-

strated many times in history that when a sufficient proportion of the population develop an urge to go in one direction at the same time, the force of government yields or melts away. This phenomenon does not occur until conditions become unbearable. Applying this to the American social problem, we can say that when the Price System can no longer function, the people will be driven to move.

Let's not delude ourselves with vain, political conspiracies about seizing power or effecting a violent overthrow of the system. If attempted and carried far enough, such action will result only in the great majority of Americans going down in the ruins of the system they are trying to overthrow. Modern technology is easily destroyed. Allow that to happen and we won't have any social problem to worry about for a long time, except natural scarcity. And most of us won't be left alive to worry about that.

The American social problem is how to preserve our technology and effect a peaceable transition into the New America. It can be done only if a sufficient number of Americans are correctly informed about the physical factors which are destroying the Price System. When this occurs, these citizens can then give the proper direction to the inevitable mass movement of the population, so that we can escape social chaos. That is what Technocracy is doing. The trouble will not be with the 2 percent who control society, but with the 98 percent. As many of them as possible must be correctly informed. What are you doing about it?

How do you expect Technocracy to come into operation? What is the first movement in the transition? T. G. W.

Regarding your first question, we will

state that you are evidently laboring under misconceived political concepts about 'taking over,' etc. Technocracy does not expect to ever come into operation as a minority group in control of the social system. There will be a major social change on this Continent wherein technological principles will take the place of Price System methods of social control. That is something different. Technocracy has stated many times that when a technological control is installed and in operation, the Organization of Technocracy Inc. will be disbanded. Technocracy is merely acting as a bellwether to point out the road to the New America. When we get there, the Technocratic self-assignment will be completed.

In regard to your second question, the first movement in the transition M U S T be the installation of *Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None* It is absolutely necessary for the dual purpose of maintaining social order and working out a peaceable transition into technological control. There are no qualifications to this necessity. It is supremely important.

If we do not install Total Conscription first, the breakdown of the Price System may turn into a social debacle and end in general chaos. If we try to fight it out, then even God won't be able to help America. We are not living in the ages of 1776, 1789, 1860 or 1917. North America is in the Power Age. In the past social changes and changes in social control could be effected by violence only. In America, now, social change can only be effected peaceably. Any group advocating violence as a solution of social problems is guilty of treason. Total Conscription is the only sure preventive.

In the Question Box

By Speakers' Division 8741-1

Could a Price System continue to exist if it were operated without profit? E.G.N.

Theoretically, yes. A Price System can exist and be operated without profit. However, the term 'profit system' is not synonymous with the term Price System. The concept of profit is only one part of the Price System.

The elimination of profit in a Price System does not axiomatically abrogate the Price System. On the other hand, the abolition of the Price System renders the collection of a profit impossible because the vehicle of commodity evaluation of exchange no longer exists. Pricing exists not primarily because of profit but because it is an integral part of the exchange of commodities by methods of evaluation.

Under state capitalism the State takes all the profit but it is still a Price System. One could argue that the state might return the profit to the people in various ways, thereby, in effect, abolishing profit. In that case why bother to extract profit at all. It is a roundabout method of attempting to effect distribution.

The function of a Price System is to buy and sell, i.e., exchange. It is not possible to use the tools of an exchange system to operate a system of distribution. *Exchange* and *Distribution* are two entirely different functions. If you want to buy and sell, you have to have money, price and the concept of value. Your money must have characteristics which suit it to act as a medium of exchange. It must be variable, bear interest, be capable of being saved, be negotiable, etc. In short, the entire set up of your system of exchange must be arranged so that it can be manipulated.

Trying to effect distribution with these Price System methods is hopeless. There are too many ifs, ands, and buts involved. There are too many loopholes in a Price System for a clever chiseler to find ways to beat the rules.

If you want to *distribute* goods and services, you have to use operating methods suitable for that purpose. You are now dealing with an entirely different proposition. You must abandon the concept of exchange value and price and the use of money. Your system must be set up along engineering lines to Distribute. Profit is impossible in that set up.

If that's what you want, why don't you Investigate Technocracy?

If we lend to other Nations money with which to purchase goods from us without demanding payment, isn't it possible to keep our beloved Price System and also create the 60,000,000 jobs we so ardently desire.—
J.C.H.

What you are proposing is to give North America's substance away to the rest of the world. If that course is followed, you will not get 60,000,000 jobs but an entire Continent reduced to a coolie standard of living. If we do that, we will keep the Price System all right. We will do even better. We will institute a worldwide system of fascism. If you have eight apples and eight men and you distribute the apples equally, each man will get one apple. Now, bring in 24 more men until you have 32. Then you only have a quarter of an apple for each man. Catch on?

Distribute North America's abundance among the rest of the world,

and you bring about Natural Scarcity everywhere. Then all you have to do is clamp down on technology, and you have world-wide fascism. Nothing is solved, but you have succeeded in turning the clock of civilization backward. That, in essence, is what is being attempted now. Giving away North America's abundance will not solve the world's social and economic problems. The only way to do that is to scrap the Price System here first. Then, by precept, example and more technology, it will be possible to attain a higher civilization everywhere.

What's to keep *Technocracy* from becoming a dictatorship?—
A.P.S.

The factors that will make a dictatorship impossible in a Technate are the absence of political and economic power, and the engineering character of the system itself. There can be no such thing as dictatorship in any purely functional setup. Who is the dictator in a power house? Who is the dictator in a telephone system? Who dictates on a railroad, the engineer? No, he follows orders. The Conductor? No, he also follows orders. The dispatcher? Let him try it just once and trains will be piling up all over his division.

Dictatorship is a phenomena arising in any political, economic or ecclesiastical setup. It is a part of the Price System. The only dictators in a power distribution system, a telephone system, or a railroad, or anywhere else in modern industrial civilization are the financial, political and ecclesiastical overlords. They dictate how much or how little of the good things of life shall be allowed to trickle down to the people and at what Price. They dictate what you eat, what you wear, what you think, how you believe, and practically everything else that happens to you from birth to death. It's

a strange slave who can't hear the clank of his own chains.

Scrap the political, financial and ecclesiastical superstructure over our Power Age culture in North America, reorganize it along engineering lines according to functional principles, and dictators will become as scarce as dodoes. Even then, however, if in order to be happy, you have to be a little dictator, or at least see one once in a while, the Technate will go all out to oblige you. It will reserve a sanitary padded cell for you where you may parade up and down, playing Napoleon, Hitler or any other type of dictator you prefer. In that place, however, and in no others, will dictatorship be tolerated.

Hasn't the President the power to establish Total Conscription, and that it is only necessary for people to demand that he so act?
—U.D.W.

In time of war, it is likely that the President could install Total Conscription by executive order. In time of peace, it is probable that Congress would have to do it. The President is given many extraordinary powers during wartime which are usually withdrawn, or terminate, when the war is over. The last half of your question is still valid, however.

If the American people want Total Conscription, it is necessary only that they demand it from the government. The American Government will do whatever the people want. So will any other Government, if the people want a thing bad enough. This fact has been demonstrated many times in history. The pressure of events brought about by the impact of technology upon the Price System grows greater all the time. The dilemma of the Power Age becomes more insoluble as we go into the postwar era. It is a

physical impossibility for the Price System to solve our social problems today. Further, it is impossible for it to escape the necessity of facing up to those problems much longer.

When that day arrives, and it won't be long now, it will be necessary to install Total Conscription of Men, Machines, Materiel and Money, with National Service from All and Profits to None. When the great, impending crisis breaks, it will be absolutely essen-

tial to have an orderly transitional device to get from the chaos of the Price System to the higher civilization America is destined to move into. That transitional device is Total Conscription. It cannot be done any other way. When we, as a people, have safely bridged the gap 'from here to there,' we can scrap Total Conscription. It will have fulfilled its purpose. It will not be needed in the Technate of North America.

Captains of Industry

'These great organizations are constitutionally unprogressive. They will not take on the big thing. Take the gas companies of this country; they would not touch the electric light. Take the telegraph company, the Western Union Telegraph Co., they would not touch the telephone. Neither the telephone company nor the telegraph company would touch wireless telegraphy . . . it was necessary in each one of these instances in order to promote these great and revolutionizing inventions, to take entirely new capital.'—Louis D. Brandeis before the Oldfield Hearing on Patents in 1912.

'It is a well known fact that modern trade combinations tend strongly toward constancy of processes and products, and by their very nature are opposed to new processes and new products originated by independent inventors, and hence tend to restrain competition in the development and sale of patents and patent rights; and consequently tend to discourage independent inventive thought.'—F. L. Vaughan in *Economics of Our Patent System*, 1925.

The automobile self-starter was invented in 1899 but automobile manufacturers resisted its adoption successfully for 20 years. By 1912 less than 5 per cent of cars were fitted with self-starters as standard equipment.—R. C. Epstein in *The Automobile Industry*, 1928.

'I have even seen the lines of progress that were most promising for the public benefit, wholly neglected or positively forbidden just because they might revolutionize the industry. We have no right to expect a corporation to cut its own throat from purely eleemosynary motives. Why should a corporation spend its earnings and deprive its stockholders of dividends to develop something that will upset its own market or junk all its present equipment.'—William M. Grosvenor, in an article *The Seeds of Progress in Chemical Markets*, 1929.

'Technical progress far outruns actual practice. This margin of nonuse is in part due to nonpecuniary factors, but the major explanation is simply that, on the whole, industry must be conducted with profits as the immediate goal; hence the first and major consideration in any choice of method is not merely, Will it do the work? but also, Will it pay?'—Harry Jerome in *Mechanization in Industry*, published by National Bureau of Economic Research, 1934.

In Donegal, Ireland, as late as 1821 wheeled carts to carry produce to market were rejected as useless. They still used creels on ponies' backs.—John Hamilton in *Sixty Years Experience as an Irish Landlord*.

Acrostic on Technocracy Inc.

To discount emotions, opinions, personalities and traditions and place a premium upon cause and effect factors in my social and industrial relationships.

Emphasize an attitude of intelligible criticism including self-criticism, exercising open-mindedness and suspended judgment, thus avoiding excessive egotism, altruism or dogmatism.

Condition myself to be accurate in observation, calculation, operation and report, so that my resulting conclusions will be correct and convey understanding in place of confusion.

Hold no distinction of race, creed or color and place no moral blame against any group or individual but always lay bare the Price System conditioning processes that underly all actions.

Nullify all unscientific attitudes and conclusions wherever encountered, by subjecting them to objective analysis with unvarnished facts and evidence.

Oppose all compromise with the Price System and its shabby concepts, exposing both those who uphold it and those who would overthrow it as being alike functionally incompetent.

Continually point out that the paramount concern of the social state is the welfare of the human components involved, and that this must be achieved by designed direction along functional lines.

Read and study Technocracy's analysis and synthesis exhaustively, so that I may understand my country's problems and be qualified to act as a teacher of my fellow citizens.

Americanize my thinking and behavior patterns along functional lines in conformity with the technological nature of American civilization and reject all philosophic and political social ideologies, foreign or domestic.

Convert my spare time and physical energy into use forms for Technocracy Inc., by active functioning within the mechanism of the Organization

Yield to no man in my devotion to my country and my concern for its greater destiny; and stand ready at all times to help liquidate its enemies wherever they may be found, on or off this Continent.

In this present emergency confronting America, I will do all in my power to urge the adoption of Technocracy's program of Total Mobilization for Total Peace, with National Service from all and Profit to None, in place of the present muddling of Price System methods of operation.

Never relaxing my efforts to put forward Technocracy's Victory Program by all legitimate means, I will serve in any way possible to help my country solve its social problems scientifically, thus warding off the probability of fascism, communism, or chaos on this Continent.

Conceiving no higher cause, I will never falter in my loyalty to America, my allegiance to Technocracy. By doing this in word, thought and deed, I and many more like me will assure the security of America today and the certain arrival of the functional New America of Tomorrow,

In the Question Box

By Public Speakers Division 8741-1

This department consists of actual questions asked and answered at Technocracy meetings, plus those sent in by readers.

Will the coming election make any difference in the final outcome of the Price System? A.M.

Very little, if any. The physical trends operating in America which are rendering the Price System invalid are technological, not political. The day when political methods can solve social problems is past. It has long been necessary for politicians to call in technicians for consultation. Social problems are technical problems. Politicians, of course, are interested in maintaining the status quo, at all times. To that extent their function is to sabotage the future of America as a whole for the sake of pressure groups here now. They have always performed that way and we can expect them to continue in that role. Nevertheless, the U. S. Government is the voice of the sovereign people. It will do what the people demand. To that extent it will make some difference in the final outcome of the Price System.

What is the significance of the fact that 40 percent of the million men who have returned to civilian life from the Army and

Navy do *not* want their old jobs back but want other and new jobs instead? R.F.

It's probably because they don't want to get back in the same old rut they were in before, but want to better their condition. Modern warfare is technological. The number of arts, trades and professions represented in the Armed Forces is fully as large as in civilian life. In addition, in time of war, the Armed Forces have first access to all the new technology. Also, for the first time in their life a large number of men get a chance to work at something they like and learn something new. The standard of living in the U. S. armed forces is higher than it is in civilian life for most soldiers. It is not strange that such a number of discharged service men dislike the idea of crawling back into their old ruts. They've had a taste of something better and want to find an equivalent spot in civilian life.

In the event that Total Conscription is installed, what will happen when the six months' period is over after the war ends? D.G.

Total Conscription automatically expires six months after the war is over. The only thing that will happen then is that we will return to our old dog-eat-dog social habits. If the people don't want to go back to mass unemployment, depression and

a hopeless existence, they can then indicate their desires to the Government. That is what the Government is for.

How would Total Conscription affect the men in the Armed Forces? K.N.

It would boost their morale a thousand percent overnight. It would give them the knowledge that no one could possibly make any money out of the war. They would know that the home front was on the same basis as the Armed Forces and that everybody was working together for the same thing. They would know that the country as a whole was being made into a better place to live in and return to than when they left it. This knowledge would fortify every man and woman in the Armed Forces immensely. Yes, Sir! Total Conscription would be good medicine for the Armed Forces.

Will money be worth its present value after this war; your personal opinion, please? A.D.

Opinions are worth about a dime a hundredweight and since they are all made up of hot air, it would take a lot of them to weigh a hundred pounds. Technocracy does not deal in such cheap merchandise. This speaker has no opinions about the value of money, and cares less. We

suggest that you buy the little booklet called 'The Mystery of Money.' Then you will realize that the point is not important.

I hear often that Technocracy is fascism, is that right? G.A.

No, that's wrong, according to the fascists themselves who call us communists. This old canard was spread by the various and sundry schools of socialism and communism in America to distract attention from their own little rackets; while the genuine native fascists spread an opposite story for the same reason. It's a cinch they can't both be right. Maybe Technocracy is just simply an all-American social movement. Have you ever thought of that? Look into it; it's important.

Would Total Conscription include the President and members of the House and Senate? N.B.

Yes, It would include every living person from 18 to 65 years of age, for all necessary duties, both civilian and military. However, Total Conscription would be administered by the present Government, and there would be no change in that respect. But, don't get the idea that Total Conscription is a scheme to get a fourth term for Mr. Roosevelt. The program of Total Conscription was published as early as July, 1940.

What Do You Think?

'On June 9, the third day after the invasion of France, "German sterling bonds were in demand" on the London Stock Exchange. In a day the German 5s (1942) rose from 8½ pounds to 9½. A student of European history asks if some big

money is being staked on a different view of Germany's future than the man on the street can now see.'—Excerpt from the column 'Here Is Chicago' by Robert Faherty in the *Chicago Daily News*, June 23, 1944.

what happened after the last war. The difficult period of readjustment, with thousands of trained aviation personnel demobilized, was to some extent counteracted by the operations conducted by the exhibition stunt pilots and commercial barnstormers which a lot of World War I pilots became. It opened an earning field for aircraft operators and a market for some of the surplus military equipment which kept elements of the adolescent industry alive and active on conversion work and reassembly. . . .

But such matters as barnstorming will certainly not be with us to any extent after this war, now that aviation has become commonplace. It is an economic fact that aviation, in dollar volume, far exceeds the extent of the automotive industry during its peak years. The aircraft industry has now reached the beginning of its maturity and is far beyond the novelty stage it once held.

From the standpoint of economics, judgment concerning the competitive cost of air freight and truck freight

can be approximated from the fact that operating costs of air freight would be four times as much per pound or per hour as a long-distance truck. But if the *distance* travelled per hour is six times greater, the cost per ton on an equivalent load basis is less. In other words, the greater the distance, the less the cost. And, since air freight is practical for long hauls, it is much cheaper than any other method. . . .

Air freight is bound to come. In many instances, it is already here. And when it has finally grown beyond the initial stages, it is possible that the flying wing will be a tremendous factor in its development.

For this flyable, efficient, safe ship is one of the greatest factors to be considered in the development of air freight. From my own viewpoint as a pilot it is one of the best ships I have ever tested and flown.

We have the ships and the men to fly them. The rest is up to the future and it is my belief that the future of the flying-wing air freight carrier is very, very near.

What Is Freedom?

"Long after Pearl Harbor, German and Italian radio stations in the U. S. A. poured fascist propaganda into the ears of foreign-born Americans in their own language," Charles R. Denny, general counsel of the Federal Communications Commission told the Lea Committee of the House, which is investigating FCC's activities.

Denny said that when war came there were 200 radio stations in this country broadcasting in German and Italian. These

were not short-wave stations, he pointed out, but standard wave-length stations which could be received on the ordinary parlor radio. Their programs were readily available to the 12,000,000 foreign born in the U. S.' From *P.M. Magazine*, March 22, 1944.

'The human race is capable of the most extraordinary loyalty to unrealities. Otherwise there would be no professional politicians.' The late *Don Marquis*.

Primer of Technocracy

by Education Division 8741-1

WHAT IS TECHNOCRACY?

Extraneous energy, that is, energy derived from sources outside the human body such as coal, oil, gas, wind, falling water and the power of work animals, has always played a fundamental role in the progression of mankind and in his social life. Its role is becoming more important every year. America is in the Power Age now. The impact of energy and technology has torn our social structure loose from its ancient mooring. We cannot go back and to go forward requires designed direction along scientific lines. This series of articles constitutes an elementary introduction to the social aspect of science, the body of thought called Technocracy.

Background

'The social highway of history's yesterday is lined with the grave-stones of organizations, movements and human ideas that have lived and died. Hitherto in man's social history all movements which might have led to the improvement of man's well-being have been predicated upon a moralistic, philosophic preconception that by expropriating control from the dominant exploiting interests and acquiring their methods of exploitation, the products of any scarcity economy could be more equitably distributed. All of these movements in the past and today have been based upon the theory either that all social problems could be solved and that all social conflicts could be resolved by reducing the conflicting opinions to a common consensus, or that a transfer of title or possession or use from one group to another would work a social miracle; while

in other social movements has arisen the fanaticism that only one horizontal stratification of the social structure was entitled to usher in the pet utopia of their belief—their economic salvation of the human race.' From

A-1 Technocracy Magazine.

These organizations and movements of the past and present were and are but attempted physical projections of imaginary things which have no existence anywhere in the external environment. They proceeded from the reflecting brains of great thinkers and the sympathetic hearts of great humanitarians. With due credit for their intentions, nevertheless their ideas were naught but personal interpretations of abstract concepts, arising from out of that illusory dream world of the inner consciousness. No wonder they passed back and must always so revert to the nothing from whence they

came. It is possible to project a physical thing into the inner world of imagination and make it do all sorts of funny things there. One can jump over the moon in the imagination. But it is not possible to project a purely imaginary thing into the physical world and endow it with reality because it didn't exist in the first place.

The world about us comprising our external environment is a world of things and events, of uniformity and physical laws. It is the interacting relationships between this world and the struggles of man for existence and expression that constitutes the nucleus of his major problems on this earth. As man learns more and more about the physical world, he becomes better able to adapt himself to it, and thus survive and prosper in it. The inner world of consciousness is too often used as an escape from the outer world of reality. Any attempted solution of social problems in America must be predicated on these facts. This approach need not conflict with any one's religion since, in its essence, the latter is a feeling and expression of veneration toward a superhuman power that is placeless and timeless, while social problems are a human thing of the here and now.

Characteristics

Technocracy's plans are technological in design, based on the facts of physical science. Man's hope for a greater future on this Continent must derive from an extension of the

principles of science to the operations of the social order. All moral, political and philosophical approaches to America's social problems are thus invalidated at the outset. Technology has solved the problem of production. Within the framework of science from which technology arose lies, also, the solution to the problem of distribution. Technocracy Inc. by means of arduous, factual research has worked out this solution. It has coordinated into an overall design of social operations a scientific system of society, wherein the general welfare of all the human components involved is of paramount importance.

The body of thought called Technocracy, like science, can be defined as threefold, that is, static, potential and dynamic. In the static sense, Technocracy is a body of verifiable, factual data, pertaining to American social problems. Potentially, it is a set of deduced conclusions and induced principles elaborated from this data. Dynamically, Technocracy is the application of these conclusions and principles to the problems of the American social order, so as to indicate solutions to those problems, and point out the most probable results that may be expected from the impact of energy and technology upon society.

In effect, this means the next most probable state of development of the social order. So it can be said that Technocracy as a whole is the scientific methodology for the determination of the most probable social adjustment between man and his physical environment on the North

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American Continent. Thus, it is seen that the salient characteristics of Technocracy parallel the nature of science. The difference is in degree and scope. Science is all verifiable knowledge relating to all things thus far known in the physical universe. Technocracy is all of science in its relation to social problems. In other words, Technocracy is the social aspect of science. Its field is limited to the bedrock of measurable social problems. Technocracy is dedicated to the scientific organization and ad-

ministration of modern civilization on this Continent with reference to physical operations, such as: Agriculture and manufacturing, which includes all products of the forest, mine and sea, Transportation, Communication, Education, Public Health and Social Welfare. These are real and measurable because they and man and their relation to each other all exist in the physical world about us. They are the major means whereby we live in a modern society.

Next Issue: Methods of Technocracy.

Income Groups In Wartime

Over a third, 34 percent, of all families in the United States had incomes of less than \$1,500 a year in 1942. More than half, 53.5 percent, had incomes of less than \$2,000. Nearly two-thirds, 65.7 percent, had less than \$2,500.

This was the estimate, June 27, 1942 of the Office of Price Administration, Division of Research, in Estimates of the Distribution of Consumer Income in the U. S.

OPA estimated the distribution of the 32,650,000 families in the U. S. in 1942 by income groups as follows:

Over 1,400,000 families or 4.3% had incomes less than.....	\$ 500.00
Over 3,300,000 families or 10% had incomes less than.....	750.00
Nearly 5,800,000 families or 17.7% had incomes less than.....	1,000.00
Over 11,000,000 families or 34.0% had incomes less than.....	1,500.00
Nearly 17,500,000 families or 53.5% had incomes less than.....	2,000.00
Over 21,400,000 families or 65.7% had incomes less than.....	2,500.00
Only about 2,600,000 families or 8.0% had incomes more than.....	5,000.00
About 903,000 families or 2.0% had incomes more than.....	10,000.00

For the lowest third of the families, or those with incomes of less than \$1,500.00, the average income per family for the year was \$939.00.

'David E. Lilienthal, chairman of the Tennessee Valley Authority, explained here yesterday why he thinks that project can serve as a pilot plant in the development of resources for the entire United States.

"In most valleys rivers are a periodic curse," said Lilienthal, "but in Tennessee Valley we have harnessed floods and

changed the power which causes them into an asset.

"One thing about postwar planning that hasn't been adequately understood and emphasized is that natural resources are at the bottom of everything." As reported in the *Chicago Sun*, May 1, 1944.

Propaganda Incorporated

Voice of the Price System

by The Peripatetic Technocrat

'Men's thoughts are much according to their inclinations, their discourse and speeches according to their learning and infused opinions.'—Francis Bacon.

A Penny For Your Thoughts

A penny isn't much in terms of Price System values but that is about all your thoughts are worth if you are one of the millions of Americans who rely on the customary sources of public information. By this we mean the self-called 'free press,' the radio, the popular magazines and non-fiction literature and that illegitimate offspring of the fourth estate, that saccharine voice of business, the 'house organ.'

In all history there has never been a people so deluged and deluded with misinformation as the inhabitants of North America at this particular stage of development of their social structure. Never before in history has any area attained the technological advancement characteristic of America today. The things developed during the last generation and the events occurring as a result of this are numerous, complex and intertwined. They are so advanced over, and different from, the developments of preceding generations and so fraught with national import that the

social picture as a whole seems to be highly confusing.

This is largely so because we approach the problem with the ancient concepts of social life and the verbal tools of yesterday's seven thousand years of human toil, hand tools and scarcity. There is a vast difference between the status of science today with its concepts solidly established in physical laws and the hoary ideas handed down to us from ancient cultures. This inequality of development has set up an irreconcilable conflict between the outworn agrarian-handicraft ideologies of our forefathers and the scientific concepts necessary for this generation to live and prosper in the Power Age. This conflict in our social structure is the lush field where Price System propaganda flourishes.

*'Little Jack Horner
Sat In A Corner—'*

We Americans individually are the smartest people on earth but collectively we are the largest aggregation of suckers who ever quietly acquiesced to want in the midst of plenty. Here we are on the richest Continent on earth which offers an abundance of everything to its inhabitants and we haven't enough collective sense to assess the situation correctly. Even a mule has better sense. Nobody ever heard of a mule either starving or foundering himself

in the midst of plenty. We do both. When we can't get to the plenty, as is normally the case, we starve with Christian resignation. When we do get to the plenty, as in time of war, we founder ourselves with hoggish glee.

The only thing we never had any scarcity of on this Continent, and which is more abundant today than ever before, is propaganda. Most people think of propaganda as something fostered exclusively by enemies outside of America. We hear a great deal about German, Japanese, British and other forms of foreign propaganda. Such agitation does exist in our midst. It is the psychological arm of European and Asiatic fascism designed to conquer 'the richest loot in all history,' North America. It has been broadly publicized and today most well-informed citizens can recognize Hitler's line when they hear it. Even the native fascists, who peddle the foreign line, have been tabulated, sorted and labeled by the efficient efforts of the FBI. However, the native fascists who peddle the native line are not so easy to corner.

There are symbols in the 'minds' of men which stand for things and events in the external world. The total sum of all such symbols in all 'minds,' after eliminating duplicates, is the sum total of our knowledge of all things and events in our environment.

'Words Are — The Money of Fools'

Terms derive their meaning not from the dictionary definitions of scholastics but from the way the great mass of people use them and the framework of reference within which they are used. As S. I. Hayakawa puts it, in *Language in Action*: 'Looking under a hood, we should ordinarily have found, 500 years ago, a monk; today we find a motorcar engine.' Propaganda means any systematic body of concepts or beliefs designed to influence a course of action. Note here, specifically, that a body of facts which *dictates* a course of action does not constitute propaganda. The intent to deceive, or influence, is not present.

The fact that the Price System press has more or less restricted its interpretation of propaganda to mean foreign agitation is excellent camouflage for the native propaganda of the American Price System.

The lag between our ancient ideas of social life handed down from the age of scarcity and the concepts of science and technology by means of which we live today has produced a situation wherein the old ideologies, no matter how suitable they may have been to the past, now function as a body of propaganda to resist social change and maintain the status quo.

This would not be important if it weren't for the fact that social change is being forced upon America, willy-nilly, by the impact of technology. This makes it extremely important for all of us to realize that we will have to relinquish the status quo and adapt

ourselves to a new status, whether we want to or not.

Our Hindsight Is Wonderful

The retarding effect of this institutionalized propaganda upon social change is incalculable. There are whole libraries full of the stuff. It is incorporated into our educational system. It is a part of our moral beliefs. What is more important, these concepts, constituting propaganda against social change, are part and parcel of the system of trade and commerce. The institution of business just loves them. They are welded into its devious operations of buying and selling natural resources for private profit.

The human being responds to its external environment through the mechanism of the conditioned reflex which is a purely automatic but tremendously complex nervous control mechanism. These conditioned reflexes are subject to manipulation through the device of controlling the environment.

The retrogressive concepts of the Price System are legion. It would take a dozen volumes and more time than one man is allotted to adequately portray them all. We are born to the babble of their philosophy: 'Adam's sons are born in sin'; 'All babies are savages'; 'Man was made to mourn.'

We drag up our children to the same vacuous ideas that our parents used on us: 'A child should be seen and not heard'; 'Don't ask so many questions'; 'Mama knows best.' In fairy stories we put over the same line on our little citizens: 'Every cloud has a silver lining'; 'There's a pot of gold at the end of the rainbow'; and 'They lived happily ever after.' We enter school to the joyous ringing of the bells and listen wide-eyed: 'Figures don't lie but liars sometimes figure'; 'Reading maketh a full man'; 'There are two sides to every question'; 'Use your common sense.'

We get married with the symbolic ring of their slavery, pledging troth to that trilogy of incompatibilities, love, honor and obedience. We go to bed with them at night and arise to their hollow echo in the morning: 'Early to bed and early to rise makes a man healthy, wealthy and wise.' We work with them every day: 'His brow was wet with honest sweat'; 'A penny saved is a penny earned'; 'Go to the ant, thou sluggard.' When we get ready to leave this madhouse we die to their doleful dirge: 'Going Home, Going Home'; 'We will meet on that beautiful shore.' Finally, when Gabriel blows his horn and we all line up before the pearly gates, while the roll is called up yonder, some one is likely to shout: 'Blessed are the meek for they shall inherit the earth.'

'Roll On, Thou Dark Blue Ocean'

These are only a few lighter examples of retrogressive concepts in

Price System propaganda. This propaganda is not new. It was not invented by Corporate Enterprise to keep the people in subjection. It has been accumulating in folklore and tradition for thousands of years. It constituted the simple, homely wisdom of the simple handicraft-agrarian society that endured for ages. We inherited it along with the institutions out of which it sprang.

It is impossible to escape from this propaganda. It is omnipresent. It blares forth from the radio, the movies, the lecture platform and the school room. It stares at us constantly from the press and from magazines and books. It leers at us quietly, tier upon tier, in the subdued atmosphere of libraries. It is so much a part of our daily life that both those who receive it and those who dish it out are almost unconscious of the process. Nevertheless, it molds our reactions into Price System behavior patterns. It makes us conform to the Rules of the Game. If we know what is good for us, we dare not go counter to this propaganda. It is the psychological arm of the Price System which, along with its ecclesiastical, economic and political arms, is assigned to the job of maintaining the status quo.

The human being requires a smaller number of repetitions to establish a conditioned reflex than a dog, and he can sustain a higher number of orders of conditioned reflexes than a dog can. It is of this that a superior intellect largely consists.

While we cannot escape from this propaganda to any extent, we can study it, recognize its nature and define its technique of operation. Once this is accomplished we escape from its control over our thoughts. The same type of analysis which has been made of foreign propaganda can also be applied to the standard, everyday Price System propaganda. The splendid work done by The Institute for Propaganda Analysis, now defunct, on fascist propaganda will serve as a guide.

With the permission of the publishers *Harcourt Brace and Company Inc.* we herewith reprint the seven Tricks of the Trade of propaganda. They are taken from Chapter 3 of *The Fine Art of Propaganda*, edited by Alfred McClung Lee and Elizabeth Bryan Lee, copyright 1938.

Paste These In Your Hat

Name Calling—giving an idea a bad label—is used to make us reject and condemn the idea without examining the evidence.

Glittering Generality—associating something with a 'virtue word'—is used to make us accept and approve the thing without examining the evidence.

Transfer—carries the authority, sanction and prestige of something respected and revered over to something else in order to make the latter acceptable, or it carries authority, sanction and disapproval to cause us to reject and disapprove something the propagandist would have us reject and disapprove.

Testimonial — consists in having some respected or hated person say that a given idea or program or product or person is good or bad.

Plain Folks — is the method by which a speaker attempts to convince his audience that he and his ideas are good because they are 'of the people' the 'plain folks.'

Card Stacking — involves the selection and use of facts or falsehoods, illustrations or distractions, and logical or illogical statements in order to give the best or the worst possible case for an idea, program, person or product.

Band Wagon — has as its theme 'Everybody—at least all of us—is doing it.' With it the propagandist attempts to convince us that all members of a group to which we belong are accepting his program and that we must therefore follow our crowd and 'jump on the band wagon.'

Practically all social control is effected through the mechanism of the conditioned reflex. All habit formation, all language, all 'thinking' is little else than the human being's response to miscellaneous stimuli, internal and external, in accordance with his existing conditioned reflexes.

The Proof Of The Pudding

A knowledge of these seven methods in the use of the spoken and written word by which propaganda is

put over allows us to separate the device from the idea and examine the idea on its own merits. However, it is not enough to be aware of the devices of propaganda. One must also be able to analyze any statement in terms of physical operations.

This sounds difficult but it isn't. Any concept in the 'mind' must stand for something that exists (a thing or event) in the physical world around us. If any concept does not have this direct relationship with something real in our environment, then it obviously exists only inside our heads and cannot be measured or tested. Such concepts must be handled with the circumspection due their fragile status.

To illustrate this principle, let's take two questions. 'Are there parts of nature forever beyond our detection?' This question is devoid of physical meaning because there are no operations by means of which it can be tested or answered. Now for a different type of question. 'Does the shamrock grow only in Ireland?' Here is something with physical meaning for we can perform physical operations to determine the answer.

Even in books on semantics and propaganda one finds sweeping statements about 'truth,' 'justice,' 'democracy,' 'liberty,' etc. To say that these concepts have no meaning to us would be stretching a fact. The trouble is that they have too many different meanings. Their interpretation is a matter of individual preference. Even semanticists handle them carelessly.

We are making this distinction between the devices of propaganda and

the operational concept for the sake of clear understanding. The Seven Tricks of The Trade is the method by which the Price System puts over its propaganda. The operational concept of science is the yardstick by which the reality of any idea can be tested. The language of science is in terms which are rigorously definable in operational concepts. This can never be propaganda as we understand it. The fact that science can be and often is prostituted for Price System purposes is characteristic of Price System methods of operation.

Of no less importance in social control are the conditioned inhibitions. If they are taken young enough, human beings can be conditioned *not to do* almost anything under the sun. The things they are conditioned *not to do* are called 'wrong,' and vice versa. An individual's present behaviour is the sum total of his acquired reflexes.

Count Them One By One

Let us consider the seven Tricks of the Trade seriatum. We'll present a statement of Price System propaganda to illustrate each device. Following it will be another statement on the same topic in the language of science. This parade of examples will serve three purposes. It will break down some of the regular Price System 'hooley' with which we are deluged daily, into its component, silly elements. It will furnish a yardstick with which to measure similar guff.

Finally it will illustrate the language of science by means of which alone we are able to interchange a correct understanding of our American social problems in this Power Age in which we live. Here is the first example.

Name Calling Device

The idea of abundance for all is a crackpot theory of crazy engineers.

Notice the 'name calling' words 'crackpot' and 'crazy.' The effect is to repel one at once from any serious consideration of the subject. Notice the misuse of the word 'theory.' By inference we get the idea that abundance for all is a theory only of crazy engineers. Therefore, the idea of abundance is crazy too. After all, haven't we always had the poor with us? The entire subject is dismissed by giving it a bad label, so that we will reject it without further investigation. Contrast the above statement with the following one.

There has been a verifiable analysis made of America's capacity to produce which shows beyond doubt that it is possible to distribute an abundance of goods and services to all citizens now.

This is a direct statement of fact. It must stand or fall on its assertion that the said analysis is verifiable. It is an operational concept because it is possible to relate it directly to things and events in our physical environment. It says exactly what it means and means exactly what it says. Science does not use the name calling device.

Glittering Generality Device

America is more than a people; America is more than a nation; America is the apotheosis of all that is right.

This statement tells us nothing informative about America. It is a pure case of glittering generalities. There are no data incorporated to indicate the reasons for America's greatness. Instead it is exalted in one breath to the divine status of equality with 'all that is right.' The word 'right' is the glittering generality. No one knows exactly what 'right' is. It exists only inside our individual heads in highly disparate interpretations. There is no common agreement on what 'right' is, since it is not a real concept. Consequently, we cannot perform any physical operations to relate it to the things and events in our environment but only to what we 'think.' 'Right' is whatever we think it is at any given time and place. Contrast this with the following statement.

America is the number one technological potential of the world and no method of social governance now existing can bring about the highest functioning of its endemic setup of geologic conformation, equipment, technology and personnel.

Here is a whole bookful of information about America in one sentence. Any citizen possessing knowledge of our country's resources and technology can understand it. This statement is not propaganda for or against anything. It merely recites existing facts. Science does not use glittering generalities.

If we wish to understand the world about us it follows that we must use a language whose structure corresponds to physical structure. Man is entirely meaningless and inexplicable except in relation to his physical environment for he is conditioned by his relation to it.

Transfer Device

Free Enterprise is the American Way.

Here is a good old standby of the Price System. It tells us exactly nothing about the characteristics of the thing called 'free enterprise,' i.e., where it came from, how it operates and what its net social accomplishments are, if any. Is 'free enterprise' the way of the two percent of Americans who chisel and live in abundance or is 'free enterprise' the way of the great majority who work when they can and live in enforced scarcity? Deponent sayeth not. Of course not! The deponent's purpose here is to transfer some of the prestige of something that is revered over to something questionable in order to make the latter acceptable.

Do you mean to say that 'free enterprise' is trying to make black seem white? The answer is 'yes.' Then what about the American Way, is there such a thing? Yes, there is a way of life that is applicable to all and can correctly be called the American Way. It is not what the chiseling minority of Americans would

like to have the great majority of citizens think it is. In the following paragraphs we will straighten out this pretzel of propaganda.

The American Way is the way of the world's greatest industrial civilization, the application of physical laws by quantitative and qualitative measurement to its social and industrial problems, the voluntary acceptance of scientific controls, and the production and distribution of abundance, security, equal opportunity and real democracy to all citizens from birth to death.

If we take an inventory of everything in our external environment we note objects, forces, things. This inventory will find no ideals, principles, essences. The most powerful microscope cannot find them, nor can they be revealed by mathematical equations. Physical science knows them not.

Here is an operational concept of what constitutes the real American Way. It is the partial application of these principles that has made America what it is today. These principles are intrinsic to the physical America in which we live. Their partial application was perforce compulsory in the past because that was the only line of development in our expansion as a nation. 'Free Enterprise' just went along for a free ride.

'Free Enterprise' never was either free nor enterprising beyond a certain point in its development. In

America that point was reached a generation ago. The so-called American Way of 'Free Enterprise' never did, does not now, and never can exist for any but a small minority. It's a physical impossibility. Of course, any one can open up a peanut stand, peddle shoestrings on the sidewalk or sell apples at the corner. Is that the American Way? Seventy-eight percent of the world's installed horsepower of machinery, 73 percent of the world's graduate engineers, over 1/2 of the world's known resources, the largest body of technicians and skilled personnel on earth, the most advanced technology known anywhere, 19 percent of the world's land area and 10 percent of its population thunder NO!

The American Way is not the picayune way of 'Free Enterprise' with its chiseling and corruption, its politics and profit, and its regimentation to the dictatorship of scarcity. This muddling, unproductive-non-distributive (except in wartime for an extra large profit), wasteful system of trade and commerce dubbed 'Free Enterprise' by its chief beneficiaries is not native to America. It is a part of the ancient Price System culture imported from the old world and put to work ravishing the natural wealth of this Continent.

The American Way is the way of science and technology which have made America great in spite of the century and a half long corruption of its politicians, the pillaging of its 'Empire Builders,' the picayune social brains of its 'Tycoons of Business' and all the 'cockroach capitalists' who

are forever bellyaching about 'free enterprise.'

The actual role of 'Free Enterprise' throughout American history has been that of one of a number of bloodsucking leeches which, now that some of them are being shaken off by the trend of events, are hawling for freedom for leeches to live off their host, so that their own position may remain secure for a little while longer. Science does not use the transfer device of propaganda.

Abstract concepts are first created in our 'minds' and then objectified by nonfunctional language. They have no operational significance since there is no referent for them in our external environment. It follows that such concepts cannot be measured.

Testimonial Device

Eminent economists have made a study of scientific social ideas and declare them to be unsound.

Now, isn't that just too ducky. You can't get around that phrase 'eminent economists.' It is very respectable testimony. What does it matter if there are a dozen conflicting theories on economics and that the statement does not say which school studied these ideas? What does it matter that economics is not classified by any one above the fourth grade as being a science? What does it matter if economics is a controversial melange of opinions? The testi-

monial device consists in having some respected group or person say that a thing is good or bad. 'Many movie stars use Blurp's and Blurp's face cream, it makes them beautiful.'

You will notice that the statement says that 'eminent economists have made a study of scientific social ideas.' Now, it is highly unimportant whether the social aspect of science is considered sound or unsound in any one's opinion. The important point is whether or not its analysis and synthesis are correct. In order to determine this one must make the same scientific study of physical America that social scientists have made. If the facts uncovered and the measurements taken jibe with theirs or are at variance, then only can one determine anything worthwhile. You can't judge the quality of Blurp's and Blurp's cold cream by its Crossly rating nor the conclusions of 'eminent economists' by their skill in splitting hairs or juggling opinions. Following is a correct definition of economics.

Economics is the study of the pathology of debt and how to keep goods and services scarce.

Here is a statement of fact devoid of propaganda, although it is necessary to comprehend the social aspect of science in order to understand it. Once grasped, however, it will be seen at once why 'eminent economists' have denounced the social aspect of science. The two are completely incompatible. One is dedicated to the study of debt whereby scarcity is maintained. The other is dedicated to instituting abundance by means of

technology. In spite of this oppositeness one will not find any propaganda against economics in any scientific social literature. Science does not use the testimonial device.

Only that which is real is measurable. Objects, forces, things are the only realities which can be discussed intelligently. They alone have meaning in reality. What useful meaning any abstract concept has can only be measured by the context in which it is used.

Plain Folks Device

What is good for business is good for you.

Here is a bit of Price System propaganda that sounds plausible. It resembles the parable about the rich man and the beggar Lazarus who was thankful for the crumbs that fell from the rich man's table. No doubt Lazarus also thought that what was good for the rich man was good for him. That is the behavior pattern business is trying to inculcate with this propaganda. Following is an operational concept of business.

The institution of business operates to exploit the natural resources of this Continent and its people collectively for all the profit the traffic will bear.

Regardless of how much business pats itself on the back, that is a correct statement of how it functions. If business ever became crazy enough to consider the welfare of the Continent and the people it exploits, it

would have to go out of business immediately. It would be smart for business to cease using the 'Plain Folks' device of propaganda. Some day the people might take it seriously. That would be bad for business. Science does not use the 'Plain Folks' device.

Card Stacking Device

Hitler uses the methods of science to control Germany's social order and that is what makes nazism so efficient.

Here is an example of stacking the cards against the presentation of any proposed solution of American social problems by the use of scientific methods.

If you recall, the card stacking device involves the selection and use of facts or falsehoods, illustrations or distractions, and logical or illogical statements in order to give the best or the worst possible case for an idea, program, person or product.

The statement is a mixture of facts, lies and false comparisons. It is a fact that fascism uses a mixture of science and pseudo-science to some extent in the operation of its social order. These methods are used for the dominance of a few over the great majority, and not for controlling the social order as a whole on a basis equitable to all the human components involved. Fascism uses pseudo-science when convenient, not for the solution of social problems but for their suppression.

By inference the above bit of 'card stacking' is also 'name calling.' It attempts to attach all the repulsive

connotations of fascism to any American social program based on the methods of science. Contrast this fascistic propaganda against the social aspect of science with a definition of fascism stated in operational concepts.

Fascism is a reversion to a lower order of civilization based on human toil and hand tools; it is a barbaric network of compulsions in race, religion and economics; it is the perversion of science and technology to the perpetuation of scarcity for the great majority with wealth and special privileges for the favored few; it is the consolidation of all minor rackets into one major monopoly for the preservation of the status quo.

Here is a verifiable analysis. Any one can collect the facts upon which it is based. As such it cannot be propaganda. The type of social retrogression characterized as fascism is contrary to the natural destiny of America. American technology is laying the foundation for a higher form of civilization, not a lower one. Science does not stack the cards; it sticks to the facts.

Band Wagon Device

'Join the growing circle of smart housewives who lighten their labors with HI-DEE-HA-HA kitchen cleanser.'

'The Christmas spirit lies deep in the heart of man; do your Christmas shopping early.'

'Make your vote count on the win-

ning side; vote for Luke X. McGlucke for Governor.'

'Get in on the ground floor; invest in Squedunk's Handy Widgits now.'

Here are only four of the host of bandwagon slogans we hear all the time. Their purpose is to get us to hurry up and do something because all the other smart saps are doing it. Jump on the bandwagon and let the suckers walk. Get rich quick. Be smart. Be on the winning side. Avoid the crowds. Get there first. Squeeze somebody else out. To hell with the other fellow. Me first. That's the psychology of the bandwagon device.

An abstract concept cannot be endowed with reality by using synonyms. This substitutes one abstraction for another. Thus we enter a maze of ever higher abstractions mistaking symbols for reality; and peopling our environment with a demonology of absolutes and spurious entities.

Following is a statement of urgency involving exactly the opposite psychology.

America must choose between Science and Chaos.

This sounds like a use of the 'bandwagon' device of propaganda. Nobody likes or wants chaos, so it appears they are being urged to jump on the 'bandwagon,' or else. The average man dislikes being forced to choose between two things and the semanticist dislikes two-valued orientations. We are not concerned with either of these dislikes here. The

point is what do we mean by 'science' and 'chaos' and is there any other choice available?

The term 'Science' in a social context means the application of scientific principles to social problems and social governance by science. The term 'Chaos' in such a context means civil disorder approaching the point of complete social breakdown. Social chaos can take many forms but in any form it will be hell on earth for the average man. There is no such thing as a nice, kind, orderly, Christian chaos. There's just plain chaos and it is just plain hell for everybody concerned.

'Capitalism' that latest stage of the Price System in America is dying on its feet. The entire North American Continental Price System has been rendered invalid by the impact of technology upon its structure. What vitality there is left in society in North America today comes from other sources than the traditional 'Capitalist' institutions.

From now on the American Price System can proceed in only two directions. It can collapse and be succeeded by a higher, more efficient form of social governance designed along scientific lines or it can revert to an earlier stage of its development when it was at a lower and slower order of operations. In the event this latter happens, the population or its living standards will also have to be reduced accordingly. Here is where chaos will enter the picture. In the event the Price System yields to science, there will have to be a diligent,

foresighted and forthright application of non-price system principles to social problems. It is, and will be, a race between social organization and social catastrophe.

One thing is certain; America cannot muddle along much longer. Our Continental growth curve has passed its peak under the Price System. If we are smart enough collectively, we can stabilize it at a high level for a long time to come. We have the men, machines, materiel and the 'know how' to do it. If we continue to be smart individually but stupid collectively, the lightning is sure to strike us down and write 'finis' to the dream that was America. Most of us will not even be here to read the last chapter of our history when it is written. Yes, indeed! America *must* choose between Science and Chaos. Science does not need to use the 'bandwagon' device of propaganda.

The structure of language should correspond with physical structure. The word is not the thing but only a symbol of the thing, or event, referred to. Keep that clear. Structurally spurious language is the breeding ground of propaganda.

How Long Is a Rubber Band?

This just about concludes our excursion into the field of propaganda. Men are not motivated primarily by the use of words or the misuse of them, but by their physical interests. You can lecture all day to a starving

man about the sacredness of property rights and the stomach will still deny the head. Nevertheless, mental concepts are a powerful, secondary conditioning factor in the human makeup. When physical conditions are not too unbearable, men are, in the words of Sam Walter Foss 'Prone to go it blind along the calf paths of the mind, and work away from Sun to Sun to do what other men have done.' Such being the case, it is necessary to clear away as much mental rubbish as possible from our collective social consciousness. This makes the going easier all the way around.

In the beginning we defined propaganda as any systematic body of concepts or beliefs designed to influence a course of action. We also specified that a body of facts which dictates a course of action is not propaganda. Perhaps an example will serve to clarify the difference.

If you want to win an election, you erect a systematic body of concepts designed for that purpose. You take all the minority pressure groups into consideration and make up a set of promises to suit each one. Then you gauge the opposition's weaknesses and make another set of promises to convert them to your advantage. Then you circulate around among the electorate, waving the flag, kissing babies and engaging in sundry allied political activities. If your propaganda is carefully enough worked out and skillfully enough delivered, you may win. Compare this with a body of facts which dictates a course of action.

Suppose you want to build a bridge across San Francisco Bay? The factors here which influence your course of action are already determined. You do not build a body of concepts to suit the job; you find the facts which control the problem and then go accordingly. The height, breadth and weight of the bridge are not amenable to propaganda. They are determined by such factors as the stretch of steel, the varying temperature of the air, the type of bedrock underneath and the curvature of the earth. Your course of action is dictated by the facts involved. All you have to do is figure them out and get your decimal points in the right place. Such a body of concepts is not propaganda.

Men think and talk in symbols. To make a statement is to symbolize a thing or event. The point of all talk is to discover what the symbols stand for. Unless this is accomplished nothing comes through but empty sound waves.

*'When In The Course of
Human Events—'*

It is not a far cry from solving the problems involved in building a bridge across San Francisco Bay to solving the social problems of the entire North American Continent. The modulus and calculus are the same. What is more, the problem is of the same order of complexity and

magnitude, relatively. That is to say, social problems are now technical problems, not political nor moral problems. It is only in these fields and similar ones that propaganda can flourish.

Communication is a two way process. The hearer's 'mind' works as hard as the speaker's. The scientific method in language is the only method which men can use to communicate with each other. Facts are for scientists the ultimate things from which there is no appeal.

Science, of course, can be used in any way. It is not a conscious entity but a body of knowledge and a method of approach. Under Price System methods of operation whoever sits in the seat of sovereignty in the social order controls society and all of its appurtenances, including science. In a scientific social system, no man or group of men would hold sovereignty over the social order. That would defeat the primary purpose of such a system. If it is to be scientific, it will have to be governed by a design based upon existing facts and changing from time to time as new facts become available. All men will be subject to the design. The directing control in a scientific social system could not go beyond the design. Their function will be limited to assuring adherence to the design only, and to its modification by the methods of science when necessary.

Sovereignty will reside in the social design itself.

Here is where the body of thought called TECHNOCRACY differs from every other systematic body of concepts in existence. It is not propaganda and it is not prophecy. It is the social aspect of science, comprising a body of facts which dictate a certain course of action. For this reason Technocracy's analysis and synthesis cannot be neatly classified and disposed of as propaganda. Neither can it be catalogued as the composite desires and opinions of a body of scientists and engineers imbued with humanitarian motives. It must be accepted for what it is.

After we have tested out our last futility, doodled with our last petty Price System project and been smoked out from behind our last excuse, there TECHNOCRACY will still be. In the long run, we will have to recognize that it is a social program dictated by a verifiable body of facts. There is no rebuttal possible either in economics, ecclesiasticism or politics, because the body of thought called Technocracy includes the best of all these and much more besides. There is absolutely no answer to TECHNOCRACY anywhere. And—this is not propaganda!

'Something is wrong when a youth whose parents were penniless was put in jail for five months for stealing \$2.50, whereas a civilian who profited by illegal war contracts was merely fined and an Army officer was merely reduced in rank for the same offense.'—Russel W. Ballard, director of Hull House, Chicago, Ill., as reported in the *Chicago Daily News*, July 7, 1944.

Why I Am a Technocrat

Cry It From The Roof Tops

By Bill Raby, 8741-1

In the continuum of eternity we are nothing, in the aggregate of humanity we are few. Yet the nothing is the something of which many things may come, and the few, through their location in space and time, may have the strength of a vast multitude. For at a critical point in man's progression but one voice to give the word, but one hand to point out the correct direction may well spell the difference between barbarism and the higher civilization men have faintly glimpsed. Nothing is surer than that, if now we fall, if now we who have sighted the sun sink back to the slime, we shall sink farther than the muck from which we first rose.

They say of us that we are altruists, that we are crackpots, that we are traitors, that we are saints. They are wrong. We are none of these. We are merely men and women who have looked into the flash of fact and have been dazzled by the promise that science offers us. Though we were never again to feel the searing light of the first glimpse of fact, yet into our eyes and our minds its intelligence has been burned.

'Abundance exists.'

That is the great word. ABUNDANCE. That is the blinding report of Technocracy. Yet there is another intelligence. This disclosure, too, is engraved in our being.

'The Price System is doomed.'

This intelligence is deep within us, and we cry it ceaselessly to all who will listen. 'Abundance exists!' we cry. 'The Price System is doomed.' If the first is so, and the existence of potential abundance is a FACT, then the

second must follow as surely as a boy follows a girl.

The Price System, any social system effecting its distribution of goods and services by means of a system of trade or commerce, based on commodity valuation and employing any form of debt tokens or money, postulates scarcity. That is the reason abundance dooms the Price System. Scarcity is the Price System's only reason for being. Without scarcity, the Price System fails.

Why? In the Price System, two factors determine the price of any given object. The first of these is supply, which is the amount of the commodity available. The second is demand, which is a compound of desire or need for an object, and ability to buy. Desire or need alone is not demand. Ability to buy alone is not demand. The two must go together.

Further, in the Price System, if the supply is small and the demand great, the price rises. Contrariwise, if the supply is great and the demand small, the price drops. The condition of small supply and large demand is the perfect one for the Price System. The ultimate development of that ideal is perfect monopoly. The opposite condition is anathema. Large supply and small demand spells disaster.

Yet the condition of large supply and small demand is the one the Price System faces. With more goods for less work, the System faces the ironic probability of 'overproduction,' in the sense that there will be no buying power to absorb output, on a continent, where most men have never yet been adequately fed, clothed, or housed.

The Price System remedy is artificial scarcity, the scarcity of the New Deal with its payments for not producing, the scarcity of monopoly which produces less to profit more. But that is the only way that the Price System can survive. So long as the Price System exists, that is the only type of remedy that will be applied to the physical ills of man.

Again, why? Why, because there can be no value in the Price System without supply and demand interacting. And if the supply increases so that it is out of all proportion with the demand, price completely disappears. Air is a good example. It is vital to life, hence the demand probably is large. Yet the supply is, for practical purposes, unlimited. What is the price of air?

So it is in every field, the greater the supply, the less the price, and the less the supply, the greater the price. Thus the Price System remedy is to decrease supply, either through restricting production or destroying output, even though the restriction may be called recession, and the destruction war.

But a system operating in a fantasia smashes into trouble every so often. In fact, the Price System on the North American Continent, trying as it is to distribute scarcity in the middle of abundance, is smashing itself apart. You just can't work it. You can't drive through California by using a New Hampshire road map. Get the idea?

It's the same thing with the Price System in the middle of abundance. You can hang onto it, but the trouble is that the Price System road map is turning one way while the real road actually goes another. And the way the map shows, the way the Price System blindly goes, is right smash-bang over a cliff!

That's the thing we Technocrats see. And we think that when the Price System has the country tottering on the brink of disaster, we'll be able to show the people that they've been following a map that doesn't deal with the world as it is. And we'll have a map to offer them, a map that does fit the country we're traveling in.

We're not doing it because we're little plaster saints. If the Price System smashes everything, we go smash with it the same as everyone else. And if the new road is a lot smoother, why it's just as much smoother for us as for anyone else.

And besides that, there's the feeling of pioneering a world of abundance, the same urge that makes a fellow sacrifice to send his kids through college, the hope that the future will have more than the present.

Yes, to eternity we are nothing. In the diverse ranks of mankind, we are few. Yet we who know and work may do the simple task of throwing the switch that flashes on all the lights of a brighter world. Others have built it, and others will operate it. Yet to us, and on us, because we live these crucial events in this space and this time, devolves the responsibility for throwing the switch or condoning through our negligence and apathy the greater darkness that will descend.

For if we who have sighted the sun sink back to the slime, we shall sink far lower than the muck from which first we rose.

That's why I am a Technocrat!

In Three Volumes

'As for Marx and Engels, they were unable to foresee what would happen 40 years after their death.' (Prime Minister Joseph Stalin of the USSR in an interview with Harold E. Stassen at the Kremlin in Moscow, on April 9, 1947.)

Banker's Dilemma

Repeal The Law of Gravity

By L. W. Nicholson, R. D. 8234

'At the present time credit is the most gigantic species of property in this country, and the trade in debts is beyond all comparison the most colossal branch of commerce. — The merchants who trade in debts, namely the bankers, are now the rulers and regulators of commerce; they almost control the fortunes of States. As there are shops for dealing in bread, in furniture, in clothes and other species of property, so there are shops, some of the most palatial structures of modern times, for the express purpose of dealing in debts; and these shops are called banks.' (H. D. McLeod in *THEORY OF BANKING AND CREDIT*.)

Oh, To Be A Monkey!

A SALUTE to the Bankers! And to Charles S. Garland, president of the Investment Bankers Association, an extra pat on the back.

According to the A.P., Mr. Garland, who attended an I.B.A. Convention at Palm Beach, Florida, in December 1946, made a statement which is noteworthy. He stated that investment bankers 'are just as confused as other business men as to where the country is heading.'

It is not difficult to understand why these gentlemen are confused, since they apparently have not taken the trouble to inquire into the fundamental nature of the commodity which they buy and sell, namely, debt. Money, according to Professor Soddy of Oxford University, is: 'The nothing you can get for something before you can get anything.' It can be created by the use of ink on paper. Physically, it is worth only the physical cost of the ink and paper. It has no other value except in the minds (?) of men. The 'minds' of men do not place exchange value on a commodity unless it be scarce. The air we breath is not scarce, and the bankers and business men, as yet, have been unable to make it scarce. Hence, it cannot be bought, sold or traded.

Today, bankers are asking for higher interest rates. The solution to this problem is so simple a quarter-wit could find it in less than five minutes. When the price of cotton dropped, the politicians, being afraid that they would not be reelected, solved the problem by paying the farmers to plow it up and not to plant so much next time. Pigs, fruit, wheat, potatoes and many other commodities received the same treatment.

When production became too abundant (for the market, not for the people), business turned loose both barrels. Not only was production slowed down, but shoddy goods were made. Both increased scarcity and raised prices. Politics and business understand well the prime necessity for scarcity.

What the bankers need to do is to stop using so much ink and paper in the production of money. This will increase its scarcity, people will think they need a larger share of the scarcity, and will be willing to pay a higher rental for a loan. There is only one little catch to this, and that is, the bankers will first have to repeal the impact of Technology. Some job! No wonder the IBA is 'confused.'

We don't blame them. After all, bankers have to obey the Rules of The

Game of the Price System. These dictate that they must buy debt low and sell it high. It's just hell when you have to sell it low. No wonder the banker is called the meanest man in town.

If monkeys on an island had all the cocoanuts they needed, they could throw half of them in the ocean and

have a scarcity. But no monkey would be such a fool. Only a moronic Price System operates like that. No monkey has ever talked himself into believing in an economic system which could operate only under scarcity conditions. What a bunch of suckers men turned out to be in supporting the Price System. Maybe Barnum was right!

Move Or Be Chewed

'I am deeply disturbed about the lack of economic understanding in America, particularly among those who make the most vital decisions. I found the greatest awareness of economic principles among the workers on your assembly lines. Most of the business men with whom I talked seemed dangerously ignorant of what makes your economy function. But the greatest ignorance of all is displayed by your bankers.' Observations of a prominent British industrialist to an official of the U. S. Government last winter. (As quoted by *Local 600's Ford Facts*, January 11, 1947.)

'At the top of the boom period when the pipelines of production are full, the major emphasis of typical research programs should be directed towards cutting production costs in order to increase the net profit by lowered labor cost. In times of depression such as the turbulent 30's the major emphasis is on new products and new fields of application.' (Maurice Holland, industrial adviser in the *Chicago Journal of Commerce*, January 6, 1947.)

(Ed. Note: In other words when pickings are easy that's the time to grab all you can grab, even the part that can be grabbed by cutting labor costs, even though this cutting of labor costs reduces the purchasing power that made the grabbing possible in the first place. Then when times get tough because of the application of the above process you look around for a new line to pitch at the suckers. Now we know at least one reason why the Price System is doomed.)

A diversified group of 25 corporations has announced an increase in expenditures of 48.2 per cent for expansion and modernization of production facilities for 1947 as compared with 1946. The difference amounts to an increase of \$115,125,000 for new technology. (*Chicago Journal of Commerce*, January 6, 1947.)

'Worker effort is, however, not the thing that has given the U. S. a steadily increasing standard of living and an increasing level of real wages. Neither for that matter is union organization, which for the most part simply exacts a bigger share of the productive pie for special groups. What creates more wealth is invention and technology, which put better and better tools in labor's hands.' (*Fortune*, December, 1946.)

'The security, growth and profits of industry in the future will depend on technological improvements, not on financial manipulations.' (Dr. Jesse E. Hobbson, director of Armour Research Foundation of the Illinois Institute of Technology in the *Chicago Journal of Commerce*, January 6, 1947.)

In a high-powered age nothing is permanent but change. You are in the parade and you cannot stop it. All you have to do is to stand still a little while to be under it. You might get a worm's eye view for a minute before you become hamburger. Move or be chewed.

Language Of The Cash Register

'Make It Pay, Boys'

By Roger Elgood, 12348-1

'The outlook of the scientist when he turns his attention to the problems of social organization is essentially constructive . . . The standpoint of the economist is essentially obstructive . . . When the engineer says that a social amenity is technically realizable and the economist replies that it would not pay, the issue involved is merely one which concerns the "original definitions of the subject-matter" . . . All they (economists) contribute to the discussion is the information that they agree among themselves to use the verb to pay in an anti-social sense.' (Lancelot Hogben in his book, 'Retreat from Reason,' pages 70, 71, 72.)

Me First or All Together

Technological advance is posing the problem of revising and restating terms that have hitherto had common understanding in a pro-social sense, but which in application now prove to have a strictly anti-social effect.

The function of Technocracy is to present to the people of this continent the results of the impact of technology on our social system. A large part of this impact is upon our obsolete concepts born of a pre-technological age.

Few educationists have yet turned their attention to our capacity to produce and its relation to the entirety of social operations. Technocracy is unique in that it is the only educational organization emphasizing the importance of a particular attitude of mind in dealing with social problems. The culture of Function is the outcome of the scientific point of view applied to society. The engineer applies this mental process to his engineering problems for functional results.

Technocracy has stressed consistently since its inception that the criterion of all seats of learning IN THIS DAY

AND AGE cannot afford to be less than that set forth originally by the pioneers of modern science. These men valued 'no knowledge save as it hath a tendency to use.' Modern civilization owes much to this axiom, but is now in a fair situation for owing its demise to a departure from it. Civilization cannot go in two directions at one and the same time. Therefore, we will soon be called upon to decide in which category we are to value knowledge; that which hath a tendency to use for man as an individual, leading society downwards; or that which hath a tendency to use for man in the aggregate, to lead upward and onward.

Knowledge that tends solely to immediate gain for an individual but is fundamentally of misuse for society at large cannot be construed as 'valuable' in a social sense. In the last analysis it is anti-social, or nationally criminal. The scarcity conditioning that man has been subjected to in the past has caused him to VALUE many concepts that are detrimental to social harmony and amenity. Today these are positively dangerous to the continuity of his present power civilization. The keynote to this continuity

is its interdependent structural nature, the integrated operation of which is the means whereby we live. In other words, the natural counteractive to our faulty attitude of mind is the coercion of technology. This being inanimate, the problem of correct action is thrown where it rightly belongs, upon man's mental ingenuity. Technology is applied science, and brooks no evasions or compromises. It demands a certain type of action. It defines the 'use' of knowledge necessary for survival by the term 'functional.' This definition is not academic but endemic to the age in which we live.

Technocracy's curriculum is designed to instill knowledge that will be valuable because of its tendency to use facts in arriving at conclusions. This type of knowledge alone is capable of leading to the discovery and understanding of faulty social conditions and their correction.

Business Before Patriotism

The advent of World War II saw the most spectacular display of patriotism at a price ever witnessed. The refusal of free enterprise to accept war material contracts until the limited Profits Act was repealed by order in council denoted that business defined patriotism in terms of profit.

In this instance, their guilt went beyond the anti-social use of the verb 'to pay.' Their attitude was treasonable negligence. The like of this would have merited facing the firing squad in any forward war area.

The war now being won, this Continent is again diligently applying knowledge to business for the express purpose of more business, or to make 'it pay.' The last consideration is considered social amenity. Thus the prostitution of usable knowledge reacts on man in exactly the same manner as

any other vice or anti-social operation. Social confusion and all its attendant pathology is the resulting disease rising to a social crisis. Experience doesn't seem to teach us very fast, either.

The *California Mining Journal* reported that: In 1933 President Roosevelt commissioned George Peek, the nation's leading foreign trade expert, to prepare a report of America's foreign trade between the years 1896 and 1934, a period of 38 years. With the \$50,000 furnished Mr. Peek he began his survey and one year later submitted it to Roosevelt. No one ever heard anything about it as Peek concluded his report with this statement: 'Our foreign trade for the 38 years between 1896 and 1934 did not bring us a profit, but brought us instead a loss of \$22 billion.'

Actually, the foreign trade indulged in by this Continent has for many years consisted largely of extending credit to foreign countries to enable them to purchase our natural resources (with our money). The sole objective was 'to make it pay' at home.

What of the physical implications? On this Continent alone during World War II we scattered beyond recovery all over the globe three billion tons of irreplaceable natural resources, coal, oil, iron, copper, nickel and other metals. These were far more precious than all the gold and paper we exchanged amongst ourselves in the act of 'making it pay.' Thus we jeopardized the birthright of unborn Americans by laying waste their America, which we hold in trust for them.

On the basis of what has taken place in the depletion of our natural resources during the last fifty years (to make it pay), what will take place if we become involved in another world war need not be left to the imagination. We have an histori-

car, president of the American Automobile Association elsewhere. Just read 'There'll Always Be An England.' If you believe you have a 'right' to 'make it pay,' this article should help you decide if you like what you believe in.

And so we continue to tolerate the use of the verb 'to pay' in a strictly anti-social sense as the criterion of personal success. This is what every man and woman in every walk of life cherishes as the essential concept requisite to welfare, success and happiness. To make 'it pay' within the law preferably, but outside the law if it pays sufficiently to warrant the risk involved, this has always been the primary condition in obtaining the amenities of life.

Don't Make It Too Good

What the effect of 'making it pay' has on other humans, directly or indirectly, is of little moment. This is free enterprise. Cupidity and sharp practice along with mendacity and deception evolved from the status of fine arts to that of lauded virtues. The theory of profit or making 'it pay' became predominant in school arithmetic. Keen judgment meant a high degree of perceiving the gullibility of one's victims. Competition necessitated advertising. This is jockeying for position to exercise the opportunity to make it pay bigger than your competitor's. This competition causes the quality of products to be lowered, but it pays.

Thus it pays most to deluge mankind with the greatest variety of sub-standard, shoddy, low-priced and quickly worn-out articles that it is possible to entice him to WANT. Conversely, it would not pay to insure the greatest number of people getting sufficient of the essential things they NEED; as a maximum quality diet, adequate shelter and

clothing. These expenditures are logically; one must have life to enjoy the amenities of life.

The things we need are now well-known. They are measurable; they are abundant on this Continent. The only obstacle prohibiting their lavish distribution is the acceptance of the current definition of the term 'it would not pay.' People accept it BECAUSE they are ignorant of the effect technology has had in invalidating Price System definitions. The impact of technology necessitates the reconstruction of pre-conceived ideas upon a foundation of immediate, perceptible facts. When this is done, the verb 'to pay' will be found to have a double meaning. If it's paying you, it isn't paying society. If it is paying society, it will automatically pay you.

The original nylon stocking 'paid' society, but did not pay the manufacturer, so an anti-social change was made to effect that desired result. Society accepted the decree because society is familiar with the verb 'to pay' in its anti-social sense.

Does society need the most durable and substantial commodities it is possible to produce, or does it WANT the greatest number of shoddy and inferior articles it is possible to devise, merely because this procedure 'pays' free enterprise? Must society build up foreign trade in order to exchange things we need, or will need for things we 'want' but do not need, to make 'it pay' for free enterprise?

When the upholders of the status quo point out that using the verb 'to pay' in a pro-social sense would be fatal to the established order, they are saying in effect that scarcity is more important to them than abundance is to the people.

Abundance automatically negates the act of individually 'making it pay' by removing the necessity. Therefore,

we must insist that 'making it pay' is now anti-social in its entirety, for the need no longer exists.

Abundance Stymies Chiseling

The capacity to extort 'pay' or 'price,' legally or ethically, that is naturally accorded to scarcity, ceased to exist with the advent of abundance. Therefore, every advance of technology makes it more difficult 'to make it pay' within the rules, resulting in more attempts being made to do so outside the law. Our criterion of success being our ability to 'make it pay,' no distinction is made as to methods employed. Social prestige is equally attainable by any method. It follows that undetected social delinquency does 'pay' and will continue to do so until we install a new set of operating rules. It can safely be predicted that the finer human qualities latent in mankind will appear only in a social order warranting their exercise. These qualities are conspicuous by their absence now because of our unanimous struggle to exercise our chiseling rights to 'make it pay.' We actually insist on an obsolete method of acquiring the means whereby we live.

Cupidity and sharp practice have become so embedded in the human mind under the decent camouflage of thrift and self help as to be looked on as civic virtues of the first order. (Thorstein Veblen.)

Objective pro-social thinking must redefine the verb 'to pay' as vulgar and repulsive when employed in any anti-social sense. To the Technocrat 'to pay' is synonymous with 'to function,' and so we prefer to use that term. Only that which functions technologically 'pays.' A Continental Technate is the end product of applying the verb 'to pay' pro-socially. This is the peak resulting from the

vertical alignment of all the functional operations that go to make up a harmonious integrated society. It provides a mechanism to distribute the means of social amenity available to the Continent with a minimum of human effort. This is a design to 'make it pay' for all, by conservation and utilization. The effort would be insignificant compared to the effort we now put forth to 'make it pay' individually by the process of waste and duplication.

The contract of citizenship in a Technate guarantees a lifetime of security. It uses a medium to distribute what is available in the place of a medium to exchange for a price. This cannot fail to reflect better health, more relaxation, or leisure time, than has hitherto been enjoyed by the majority of the inhabitants of this Continent. These highly desirable amenities of life can then be marked up truthfully for the first time as clear profit. Our venture will then have paid society and the individual a thousand fold.

Make Our Country Right

In the event of our leaders involving this Continent in another major war, we are automatically involved too. It is our Our Country, Right or Wrong. It is also our duty to make sure of where we stand before it is too late. Investigate Technocracy's analysis of your situation in this matter. In any event you will disclose to yourself that the only possible 'reason' for becoming involved in another world war would be the fallacy that we MUST 'make it pay.'

There is only one best way to defend this Continent and its people. That is by joining Technocracy, learning 'what the score is' and applying this knowledge to 'make it pay' for all citizens, along technological lines.

Ten Commandments of The Price System

f. o. b. Anywhere on Earth

By The Peripatetic Technocrat

And Free Enterprise spake these words, saying: 'I Am the Operating Rules that have brought prosperity to the blessed minority, my disciples. If thou keepeth my commandments thy days shall be fruitful upon the land I giveth thee.

'If thou practiceth these commandments diligently thou shall flourish mightily. However, thou must always render loud lip service to the exact opposite set of precepts. It sounds better and keeps Homo the Sap safe in the arms of organized confusion.'

Yea, verily! Thus spaketh Good Old Free Enterprise, alias the Price System of Trade and Commerce.

The Ten Commandments

1. 'Keep wasting the good earth and the substance thereof, for thy greater profit.
2. 'Keep public education down-graded, for correct knowledge is bad for the status quo.
3. 'Keep subverting the law so as to extend and sanctify the concept of private rights over public property.
4. 'Keep the political three-ring circus (legislative - executive - judicial) going full blast so as to divert attention from the scientific approach to social problems.
5. 'Keep harping about the abstract liberties of political democracy but keep the realities of physical democracy out of sight at all times.
6. 'Keep the churches busy with circumlocutions about the dead past and the unknown future lest they acquire sociological ideas about the living present.
7. 'Keep a majority of the people always on the precipice of insecurity, ill-fed, ill-clothed, ill-housed, and in poor health, so they will always battle among themselves for preferential ad-

vantages and not unite for the General Welfare of All.

8. 'Keep the press, movies, radio, art, literature, etc., free from any taint of social intelligence by suppressing and distorting information pertinent to the real operations of the status quo.
9. 'Keep engineers and scientists well supplied with stuffed shirts and ivory towers, lest they see the social aspects of their work and get funny ideas.
10. 'Keep all Goods and Services scarce enough to command a nice, fat Price, lest Abundance overwhelm them.'

Keep Wasting The Good Earth—

The first white settler arrived in Virginia in 1607. The Mayflower landed her passengers in 1620. As early as 1685, according to Karl B. Mickey of the Public Relations Department of International Harvester Company in the Company's book entitled *Man And The Soil*: '... settlers on the eastern seaboard had remarked an increase in floods due to cutting down the forests. Streams that previously had run clear now ran brown with silt.'

Since that time 340 years ago when the Price System was imported into

North America it has done a big job of wasting forest resources. About 5/6ths of our standing timber has been cut down and not replanted. Over the decades the floods have grown more severe and widespread. The report of the Secretary of Agriculture for 1946 reveals that the yearly drain of saw timber from our remaining forests now exceeds annual growth by about 50 percent.

George Washington warned against the soil mining practices prevalent in his day. Thomas Jefferson complained in 1817 that: '... fields were no sooner cleared than washed.' (Man and the Soil)

A. R. Hall in *Early Erosion Control Practices in Virginia* quotes an anonymous letter-to-the-editor written in 1831: 'The scratching farmer's cares and anxieties are only relieved by his land washing away. As that goes down the rivers he goes over the mountains.' (Man and the Soil)

J.D. B. De Bow, professor of political economy at the University of Louisiana wrote in 1853 about: '... fields exhausted, washed into gullies and abandoned ... soil greatly deteriorated and diminished ... more and more exhausted every year. It is most clear that sooner or later an absolute state of exhaustion must result.' (Man and the Soil)

H. H. Bennet, Chief of the Soil Conservation Service states in his book, *Soil Conservation*, that more than half of the 1,904,000,000 acres comprising the total land area of the U.S. is affected by erosion to some degree. Bennet estimates that about 700,000,000 tons of soil are carried into the ocean every year by the Mississippi River, alone. This is an annual loss of 7,000 one hundred acre farms.

L. C. Gottschalk, geologist of the Conservation Service states in *Soil*

Conservation magazine for July, 1944 in an article entitled 'Sedimentation in a Great Harbor' that: In the last 100 years the federal government has removed 111,000,000 cubic yards of material from Baltimore Harbor, alone. (Man and the Soil)

The report of the Secretary of Agriculture for 1946 reveals that 43,-000,000 acres now in crops are not fit for cultivation. He states: 'It would be much better for the United States if it were not necessary to plow that land any more.' However, there's the Price System Mr. Secretary.

The report of the Soil Conservation Service for 1946 reveals that: 'Recent studies indicate that 59 percent of the dust of the 1930's came as the result of farming land unsuited for cultivation. About 38 percent of the serious erosion occurred on second-grade land which could have been farmed safely if proper methods of wind-erosion control had been used. Only 2.3 percent of the wind erosion came from neglecting conservation practices on good land.'

—And The Substance Thereof

It is not in soil mining alone that Free Enterprise obeys the first Commandment of the Price System. The normal operations of Free Enterprise are made possible by the calculated practice of waste. There is a mountain of evidence on this point available at any good library. Wastes due to manufacturing nonstandard goods and low quality products, to duplication, competition, destruction of 'surpluses,' and the creation of artificial 'wants' by advertising are all normal, good business.

Stuart Chase and F. J. Schlink state in their book, *Your Money's Worth* that the U. S. Chamber of Commerce has estimated that: '... one quarter of all industrial effort in America is wasted because of irrelevant over-

diversification of styles, types and sizes.'

The National Resources Committee stated in their report, *The Structure of The American Economy* that:

Wastes through the failure to use the best techniques of production and through faulty exploitation of natural resources likewise contribute their quota to the total waste . . . Practically every individual in the community suffers as a result of these wastes.

Nonreplaceable minerals are also wasted on a huge scale. Germany built up a gigantic war machine with a prewar steel output that never went over 22,000,000 tons a year. This was about one third the production of the U. S. at that time. In 1941 the U. S. produced 74,000,000 tons of steel. This was not enough for the colossal waste of war. Today, production is around 90,000,000 tons. Even this is not enough for the more colossal waste of the peace of the Price System. Many operations are curtailed even now because of a 'shortage of steel.'

The basic wealth of the U. S. is being squandered at a very high rate. The *U. S. News* for July 4, 1947 reports the following life span for some of America's mineral resources. Lead, 10 years, petroleum, 15 years, copper, 19 years, zinc, 20 years, high grade iron ore, 17 years. It is stated that: 'In some minerals reserves are so small that quantity comparisons with consumption cannot be made.' However, this does not worry Free Enterprise. In fact, it intends to capitalize on it.

High cost, nonferrous mines were granted premium prices during the war to increase production. An effort was made at the last session of Con-

gress to make these subsidies permanent. The bill was passed, but the President vetoed it.

So-called 'depletion allowances' running as high as 23 percent of gross income were also granted to mining companies who sold their reserve stockpiles to the war effort. That is, these favored producers were permitted to deduct up to 23 percent from their gross earnings before computing taxable income as a reward for liquidating their inventories. The fact that they got a good price for these reserves means nothing. The fact that America was at war and needed those reserves means nothing. All 'Good Old Free Enterprise' could see in the situation was an opportunity to chisel.

These 'depletion allowances' have now been made permanent by act of the last Congress and a Presidential signature. A long list of minerals is included, such as: coal, oil, bauxite, phosphate, fluorspar, graphite, vermiculite, beryl, feldspar, mica, talc, barite, clay, asphalt, potash, etc. Good deposits of these, and other minerals, are becoming scarcer in the U. S. Consequently, it is in order that we must compensate the gentlemen who own them for the depletion of 'their' reserves. How do you like that?

The Interior Department estimates that the oil industry wasted (burned off) 684,000,000,000 cubic feet of natural gas in 1943 alone. All during the war the oil industry got a 15 percent 'depletion allowance' from Uncle Santa Claus. We wonder if they got 15 percent on the burned off gas too? Try and find out.

Yea, Verily! 'Keep wasting the good earth and the substance thereof for thy greater profit.'

'Keep Public Education Downgraded'

Harry Elmer Barnes, educator and historian, writes in his book *Social*

Institutions, page 727, as follows about American education:

The men who made the first World War, those who threw us into it, those responsible for the great depression of 1929, and those who brought on and extended the second World War were literally the best that our educational system could produce; and their works are as much as we can reasonably expect from this type of education.

In other words, what Mr. Barnes is saying is that Price System operations produce a Price System type of education which in turn is geared to operate the Price System according to its ancient and lousy standards.

In 1942 the U. S. had about 860,000 school teachers. During the war and postwar period 350,000 of them quit to take up other work. Their places were filled in part by inferior personnel. Today, the nation is still short about 70,000 teachers. A *New York Times* survey recently revealed that about 200,000 teachers are paid less than \$25 a week, and the average salary is \$37 a week.

The U. S. spends only about \$3,000,000,000 a year, or 1½ percent of its national income on education. However, it manages to afford about \$20,000,000,000 for alcohol, tobacco, recreation, and beauty preparations. We don't know how much the 'Godless Russians' spend on the latter items. But, their budget reveals that they spend about \$7,500,000,000, or 8 percent of their national income on education.

The Census of 1940 reveals that only 40 percent of the male population of the U. S. got a grammar school education, only 20 percent went through high school, and only 12 percent had the dubious privilege

of one or more years at college. However, the war and postwar period increased the number of youth seeking more education. At present there are 2,100,000 students enrolled in colleges. Over 1,000,000 of them are under the G.I. Bill of Rights.

Robert M. Hutchins, Chancellor of the University of Chicago referred to this in a talk recently, quoted in the *Chicago Sun*, May 16, 1947. He said that the G.I. Bill of Rights:

... originated not in the desire to educate the veterans but in the forebodings of the economists who were sure that there would be six to eight million unemployed within six months after the war.

Likewise, he stated, that the National Youth Administration during the last depression: 'did not result from the conviction that people must be educated even if the stock market falls, but from a desire to keep them off the labor market.'

Columbia University recently published a study by Dr. Hubert Park Beck entitled *Men Who Control Our Universities*. In it he analyzed the membership of the governing boards of trustees of thirty leading American universities. It comes out about like this.

Only 6 percent of the board members were educators. Bankers and business men composed 41.5 percent. Lawyers composed 39 percent of the boards of State universities. In some cases the proportion of lawyers went as high as 75 percent. Universities with approved medical colleges had only 4 percent physicians on their boards. In 8 medical colleges not a single physician was on the board. In two engineering schools studied only 6 percent of the board members were engineers. Only 1 percent of the

trustees were farmers, and 1.6 percent homemakers. No clerical, or unskilled workers, and only one labor union official were found on the boards.

The average age of the trustees of our 30 leading American universities is 59 years. Forty seven percent of them were over 60 years old, and 20 percent over 70, while only 26 percent were under 50 years of age. The total membership of all the boards is 734. These persons are the bell-weatherers of American education. They set the policies.

Harry Elmer Barnes in his book *Social Institutions*, pages 775, 776 and 727 expresses the downgrading of American education like this.

Our educational sociologists have stolen no thunder from Stalin, nor even from Norman Thomas. At the best they are only giving what Lester F. Ward said more candidly and far more thoroughly over 50 years ago. . . . With respect to our basic institutions and beliefs, our educational system conserves the past almost as completely and religiously as did the primitive council

of elders and the tribal medicine men. No teacher is in much danger analysing the binomial theorem, but the teacher who resolutely describes our economic and political system is constantly flirting with dismissal . . . The social studies present the only cogent information that can enable us to bridge the gulf between machines and institutions. . . . Education is our best safeguard against Fascism and Communism. . . . In an era of social decline and barbarism, there is little place for education. Let those who are sceptical about this statement study the history of the Dark Ages, and let those who are sceptical about the return of another Dark Age study world events of the last fifteen years.

Yea, Verily! 'Thou must downgrade public education for correct knowledge is bad for the status quo.'

Editor's Note: Due to the length of this material it is necessary to run it in several installments. In our next number we will present the evidence showing how Free Enterprise obeys the Third and Fourth Commandments of the Price System.

Commandment of Science

. . . the commandments of science: Believe not your eyes, nor your ears, nor your senses. Believe not what seems to be or what appears to be. Believe not what other men have spoken—until you have proven it yourself. Cast aside these things and supplant them with precise and proven thought. Then you will have science. Be not swayed from living to those words for they are the words of science—and science is the salvation of the world.' (Galileo Galilei, distinguished Italian physicist, 1564-1642.) As quoted on the radio program 'The World Is Yours' conducted by the U.S. Office of Education, April 30, 1939.

'The technology of abundance cannot

long coexist with a scarcity economy and philosophy. We must either put our machines to work directly for human service in an efficient manner or be resigned to the collapse of both our economic order and our technological equipment. Every year that passes gives greater evidence of the incompatibility between our technological prowess and our archaic economic ideas and practices. Many believe that the only solution lies in handing over the control of our economic life to trained industrial engineers, who can set up a planned and efficient economy.' (Harry Elmer Barnes, educator and historian, in his book *Social Institutions*, page 865.)

Don't Blame It On Human Nature

By Hadley Cantril, Professor of Psychology at Princeton University

Reprinted from the *New York Times Magazine*, July 6, 1947

A psychologist offers an explanation of our social conflicts and suggests a solution.

Living as we do in the midst of numerous conflicts and of vague forebodings that even more and greater conflicts lie ahead, we are apt to wonder if the situation has to be as it is. Why is it that the only thing we can be sure about in tomorrow's newspaper is that the front page will continue the story of old frictions on the domestic or international scene or headline some new conflicts on the horizon? Why must men get themselves so embroiled? Is there something in 'human nature' that makes all this trouble inevitable?

In critical times like these the phrase 'human nature' is batted about by columnists, politicians, commencement orators and spokesmen for special interest-groups who either openly or implicitly have their own versions of what man's nature is. Some see the reason for all our turmoil in 'the cussedness of human nature.' Others assume that 'human nature' is aggressive and pugnacious, thereby making conflicts and wars inevitable. Some think that man is by nature selfish and competitive and that the best we can hope for is to establish some fair rules within which man's 'competitive instincts' will be forced to operate. Others, more sentimentally inclined, argue that man is by nature kind and cooperative but has been perverted by what they call modern civilization.

Whatever the views expressed, the chances are that they are rationalizations for perpetuating the system of

ideas, institutions or social and economic conditions that their exponents subscribe to. Occasionally they are assumptions on the basis of which a good-will reformer is urging a social change.

And while being assailed by all these theories as to what human nature is, we are also likely to hear from the rostrum, the pulpit or the radio a repetition of the thesis that the physical sciences have far outstripped the social sciences so that what we need today is a more vigorous study of 'human nature' to catch up with our knowledge of nature itself.

What can a psychologist say to all this? Or, to put it more strongly, what should a psychologist say to all this in his joint role of psychologist and responsible citizen? The psychologist has a self-appointed duty to try somehow to clarify the discussion of human nature, because he knows that much of the talk is potentially dangerous. He knows that some proposals for action, some important policies, are based on false premises concerning this thing called 'human nature' and are therefore bound to turn into cruel illusions, bringing further conflicts and misery in their wake. On the other hand, some proposals promise more lasting progress because they are based on assumptions that square with what the psychologist and the social scientist know to be factually true.

What, then, is this thing we call 'human nature'? Let's take a look at it the way a psychologist would.

He would point out first of all that 'human nature' is an abstraction, one of thousands of abstractions upon which men unfortunately operate. The

Me And My Shadow

Debt — Death — Taxes

By H. Smith, 8342-1

Just how much do you pay in taxes? Did you ever try to figure it out? The Institute of Life Insurance released a statement in November, 1946 stating that the average family pays almost one third of its income out in direct and indirect taxes.

The direct taxes go to Government. The indirect taxes go to 'good old free enterprise,' to help lighten its burden. Every time you spend a dollar free enterprise takes a cut of it to help pay its own taxes, not yours. That's the way this Price System of trade and commerce works.

'Everywhere That Mary Went'

Political government, long ago, waded into the muddy pool of business. It is now in up to its ears. City governments are now in the business of transportation and other utilities, housing programs, highway building, education, recreation, public health, relief, dog catching, etc. State, County and the Federal Government duplicate these activities in addition to others not mentioned.

Federal government is deep in the financial business. Through loans and subsidies (foreign and domestic) veterans compensation, pensions, civil service and military personnel pay-rolls, and other benefits it now underwrites the financial structure of the nation. Federal financial manipulation, alone, maintains the flicker of life in the dying Price System.

Whatever business that is left, after the various governments take theirs, is transacted by individuals and corporate enterprise. Private business derives its income from the sale of goods and services to the consumer. Political government derives almost all of its income from taxes. The consumer not only pays taxes directly to the government, he also helps private business pay its taxes. This is the indirect tax hidden in the sales price of the goods he buys.

After the wage earner has paid his direct taxes to the government he is free to spend the remainder of his income with non-government enterprise. Thus we see private business and the government competing for the family income. If the private enterprise 'take' through sales of goods and services is increased, less is left for the government. If the government's 'take' is increased, business gets less.

Suppose we look at the family budget to see how income is split at present. The *Detroit Free Press* of May 4, 1947 printed some interesting data on what it calls an average Detroit family. This family's current income is \$3,000. It owns a home assessed at \$4,500, a dog, a car driven over 10,000 miles a year. It has a telephone and numerous electrical appliances. The adults consume tobacco, alcoholic drinks, and buy toilet preparations, and some luxury items. They go to ball games, movies, shows, etc. For all of this Mr. Wage Earner pays \$528.33 a year in direct taxes. This amount is very close to being 18 percent of his total income.

Added to this are indirect taxes, conservatively estimated at five or six percent. The account stated: 'So it is safe to say at least 24 percent of his earnings are being grabbed by the tax collector. And it is probably a lot more than that.' Mr. Wage Earner is work-

ing about three months for Mr. Tax Collector each year.

Taxes are increasing. In the year 1938-1939 a middle income family paid 17½ percent in taxes, direct and indirect. Today it is about 24 percent or an increase of 37 percent, about 5 percent each year since 1939. At that rate in about 15 years from now the tax collector will grab the family's entire income, leaving nothing to live on. Mr. Wage Earner is being literally taxed to death.

More of the Same

It is highly probable that taxes will continue to increase. Thousands of towns, and cities like Detroit, are hardly able to budget the cost of operations at bare maintenance levels, leaving nothing for improvements. They have reached their bonding limits and must go to the people for more taxes. Many states, like Michigan, are having plenty of fiscal trouble, especially those with tremendous veteran's compensation payments staring them in the face. New taxes is the answer, the only answer.

The federal government can continue to borrow as long as the bond market holds up but it must pay the service charges on the indebtedness, along with current operating expenses, out of its annual budget. If it continues to finance the Truman Doctrine (American Price System salvation

through World Salvation) it will cost one aitch of a lot of money. Foreign aid since July 1, 1945 amounts to \$15,810,000,000 according to Senator Byrd. This is peanuts compared to the amount U. S. must spend abroad to keep business going a short time longer at home.

So the Price System answer is more debt, and more debt in the final answer means more taxes. You are invited to tax yourself to death in order to support a dying system. There is only one sensible way out of this dilemma Mr. Wage Earner. That is to let this ancient and lousy Price System die. It will be good riddance of bad rubbish.

Technocracy addresses all wage and salary earners in all income brackets. There is nothing in store for you under the tyranny and regimentation of the Price System except more taxes, more debt, more war, more booms and depressions, more insecurity, more racial and religious strife, more abstract freedoms and less real liberty.

Is this what you want? If not it's time to wake up and find out what to do about it. Let's all get together and take action to install a non-debt, not-tax, non-war, non boom and depression, non-sectarian, non-Price System type of civilization on this Continent. IT CAN BE DONE.

Join Technocracy and learn all about it.

Price System Deadheads

'There are at least a half a million tax-exempt organizations. This includes every local of a trade union. It includes the income from rental producing properties owned by some unions. It includes religious organizations. At least 10,000 tax-exempt foundations are approved by the Treasury and the number may be nearer 15,000.' (Marquis Childs in his

column in the *Chicago Times*, June 9, 1947.)

'For the first time in their history, life insurance companies made less than 3% on their investments in 1946. The earn-rate was 2.92%, compared with 3.07% in 1945, 3.61% in 1940, 5.25% in 1925.' (*Time*, June 9, 1947.)

The Figures Go 'Round and 'Round

What's a Billion Between Friends?

By Walter Palm, 7340-4

Alice never could quite make out, in thinking it over afterwards, how it was that they began: all she remembers is that they were running hand in hand, and the Queen went so fast that it was all she could do to keep up with her; and still the Queen kept crying "Faster! Faster!" But Alice felt that she could not go faster, though she had no breath left to say so.

The most curious part of the thing was, that the trees and the other things round them never changed their places at all: however fast they went, they never seemed to pass anything. "I wonder if all the things move along with us?" thought poor puzzled Alice. And the Queen seemed to guess her thoughts, for she cried: 'Faster! Don't try to talk!'

'Are we nearly there?' Alice managed to pant out at last. 'Nearly therel' the Queen repeated. 'Why, we passed it ten minutes ago! Faster!' Just as Alice was getting quite exhausted, they stopped.

The Queen propped her up against a tree, and said kindly, 'You may rest a little now.' Alice looked around her in great surprise. 'Why I do believe we've been under this tree the whole time! Everything's just as it was.' 'Of course it is,' said the Queen. 'What would you have it?'

'Well, in our country,' said Alice, 'you'd generally get to somewhere else, if you ran very fast for a long time as we've been doing.' 'A slow sort of country,' said the Queen. 'Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that.' (Lewis Carrol in ALICE IN WONDERLAND.)

Up Like a Rocket

In this age of astronomical figures in Federal appropriations, debts and taxes, we are apt to misjudge the magnitude of the amounts involved by the phonetic similarity of the words 'billion' and 'million.' By changing the first letter from an 'M' to a 'B' we are no longer thinking in terms of a thousand times a thousand but in terms of a thousand times a million, which is something entirely different.

The most satisfactory way in which to comprehend this striking difference is to compare the two on a time-rate basis. For example, to tick off a million seconds it would take a clock one week, four days and fourteen hours. To tick off a billion seconds would take 32 years.

At the present time the Federal debt is over \$260,000,000,000. To ac-

cumulate this staggering sum at the rate of one dollar a second would take 8,320 years. The first American dollar, however, was issued only in 1837 A.D. So, in order to accumulate the present Federal debt, our ancestors would have had to begin laying aside one dollar a second in the year 6,373 B.C. This is more than a thousand years before the earliest records of Egyptian civilization.

Equally fantastic is the little matter of some \$5,000,000,000 annual interest on this debt. Had the delegates to the Constitutional Convention held in Philadelphia in 1787 decided to create an emergency fund at the rate of one dollar a second, the amount saved up to the present time would just equal *one year's* interest on the present Federal debt.

From 1870 to 1917 the Federal debt ranged between one and three bil-

lion dollars. In 1919 (after World War I) the debt was \$25,000,000,000. By 1930 it had declined to \$16,000,000,000. From then on it rose steadily to \$43,000,000,000 in 1940. More than \$200,000,000,000 was added in the short span of only *four years* during World War II. Suppose the amounts disbursed during this period had been spent solely for the production of civilian goods for home consumption instead of war supplies for destruction. Our inventories by now would have risen to colossal heights and our unemployed counted in tens of millions.

Technocracy points out that the Price System has outlived its usefulness as a method of distribution, and predicts its collapse in the near future. Ever since the banking paralysis of 1933, our economy has continued to operate only as the result of more debt creation and Federal subsidies. No one has earned a dollar in the United States since 1933, except as a direct consequence of this provisional financial panacea. Mass production in overwhelming abundance, with modern, high-speed, streamlined technology, destroys jobs and values. Abundance can only be created by displacing human labor with machines and power. Debt creation, as a means of furnishing purchasing power to substitute for that which is no longer obtainable through the sale of one's services, mental or physical, is a typical politician's way of meeting an emergency with a temporary expedient. Debt inflation in such fantastic sums cannot continue for more than a short period of time without courting disaster. Moreover, it is definitely not a solution, permanent or otherwise.

It is high time the American people realized that the ancient, European Price System method of distribution is an anachronism on the North American

Continent. We are facing a denouement of progressive social disintegration by arbitrarily insisting upon its continuance. We are no longer living in a scarcity economy where production is carried on with human toil and hand tools. We can no longer depend upon precedents, traditions, opinions and intangibles for a *modus operandi*. Ours is distinctly a physical and scientific problem of producing an abundance in a high energy society with technology that is fast approaching complete automaticity. This is utterly without parallel or antecedent in the entire chronology of human events. The problem calls for a unique solution that is compatible with its phenomenal characteristics. Those who attempt to solve it by traditional methods are lamentably deficient in their knowledge of physical facts.

Down Like A Stick

The great majority of those who are employed today receive their income for services, not directly or even remotely connected with the actual production of commodities. Our contemporary economic system is composed of one gigantic hodgepodge of unplanned, individualistic, competitive enterprises operating in total disregard of social consequences. Individual and corporate cupidity and duplicity rules the roost in a wild and nefarious scramble for profits. This whole super-colossal, enigmatic and complex, commercial structure is the greatest the world has ever seen. It rests upon a tenuous foundation of banking institutions whose assets consist mainly of countless pieces of paper in the form of debt tokens and debt certificates.

Ours is essentially a paper civilization based upon myth and faith with the greatest and fanciest array of beautifully engraved I O U's ever concocted by man. This house of cards which we

have now stacked up to the tune of hundreds of billions in debt is the gossamer-like fiction upon which our whole economy functions or collapses. The last depression was of such magnitude that 79 percent of the cards were flattened. It was the worst we ever experienced and came within 21 percent of complete paralysis. We were just able to salvage what was left, through more debt creation and Federal subsidies from year to year. The record-breaking and stupendous expenditures for World War II (about \$300,000,000,000) hit the jackpot for an all-time high. This is what it has cost the American people to put business temporarily in high gear.

It may safely be predicted, however, that the force of the next depression will have the explosive potency of an atomic bomb. Depressions have a way of increasing in severity in inverse proportion to the preceding era of prosperity. We are now enjoying a boom in business that totally eclipses any previous era of prosperity in United

States economic history. It does not require a great stretch of the imagination then, to conjecture what lies ahead.

If the American people are wise, they will not wait for this catastrophe to take effect. An impartial investigation of the fundamental physical facts presented in Technocracy's analysis and synthesis will quickly convince any intelligent American citizen that there is only one way out of this dilemma. Become a functional member of Technocracy Inc., and wholeheartedly support Technocracy's program for a scientific distribution of abundance, with the highest standard of living at the smallest cost in human effort the world has ever seen.

If you are fed up with political incompetence, huge debts, high taxes, inflated prices, planned scarcity and economic instability and insecurity, you certainly cannot afford to remain indifferent. Join Technocracy Now, and help to usher in the New America of Abundance!

No Help Wanted

Robot calculators which can quickly solve intricate mathematical problems and store the answers on magnetic tape, a thousand answers to a quarter of a square inch of tape, have been designed. Edmund C. Berkeley, research consultant of Prudential Insurance Company told the Actuarial Society of America recently what the machines can do. They take in the data regarding a policy being surrendered, look up the cash value, interpolate for the premium paid to date, multiply by the amount of insurance, total any loans, compute the interest on each loan and total that, credit the value of any dividend accumulations and any premiums paid in advance, and type out the check in payment of the net value of the policy. Each machine can do the work of more

than 100 computers. (*Business Week*, May 17, 1947.)

'The Western Union Telegraph Company expects to have its first telegraph system using micro wave radio relay in operation between New York City, Washington and Pittsburgh in a few months. By this system it will be possible to handle 2,000 telegrams simultaneously in both directions, compared with a limit of about 285 under the present wire systems, Western Union spokesmen say. Work is reported well under way toward extending the radio-telegraph system from Pittsburgh to Chicago via Cleveland, Detroit and Cincinnati, and eventually it will be used Country-wide.' (*Commerce magazine*, March, 1947.)

BEAT THE DRUMS SLOWLY

I'm Just A Poor Cowboy

To many business men walking the tightrope of inflation the major question of the day is no longer if, but when will the crash come and how far will they be carried in the fall. Few practical men who must concern themselves daily with the struggle to buy materials, arrange for their fabrication and to merchandise the resulting product can see anything ahead but chaos. (Ray Moulden in his column 'Washington Roundup' in the "Chicago Journal of Commerce," September 2, 1947.)

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the social structure than the dubious dabbling in uncertain rackets that now characterizes this dying economic order. Look at the government's figures on income distribution and you can easily calculate your chances to chisel your way into the blessed minority on top of the social dung heap. The odds are terrific and they get steeper all the time.

Why be a piker in the richest Continent on earth? Why settle for less than the whole hog? Why battle around with cheap perilous rackets

when the greatest land the Sun shines upon is waiting to throw its beneficence into your lap? Face up to the fact that the Price System is on its last legs. The New America of Abundance rises shining with a brilliance almost beyond description just over the threshold. It's a fact, brother,

If you face toward the future instead of the past, you will then be one with that happy band of sturdy pioneers, the Technocrats. They are doing just that. Well, why not? Investigate Technocracy!

Moral: Don't Be A Little Guy

'The very first law passed in 1619 by the Virginia House of Burgesses fixed the price of tobacco—the money of the Colony. Wives and daughters drove into Jamestown with a wagon load of tobacco to do their shopping.

'By 1639 the price of tobacco fell so low that the Burgesses passed a law to burn half the crop. . . . Creditors got 40 pounds for each 100 lbs. of (tobacco) debt.'—From 'The Romance of Money' feature in *The Numismatic Scrapbook Magazine*. (Italics ours)

Metal Pull Toys, the kind children want and can't get, go begging in Chicago. The toys were made by three veterans with a sharp eye on the Christmas trade. But the manufacturers made one mistake. They made the toys too good. Stores, which previously had shown a keen interest, changed their minds when they got a look at the first 20,000 that were turned out. The stores told the veterans they could not afford to take the loss involved in dumping stocks of wooden toys which would become unsalable as soon as the superior metal toys were put on the shelves. (*Wall Street Journal*, December 13, 1945.)

'Trucks and busses aren't wearing out the way they should, the Society of Automotive Engineers was told today at its annual meeting here. The group was told it should prepare "wear" standards to guide fleet managers who are confused by vehicles which run for hundreds of thousands of miles, spurning time, distance and wear.

'Gavin W. Laurie of the Atlantic Refining Co., Philadelphia, said preventive maintenance keeps trucks in safe operating condition for more than a decade and a million miles. He said reasons other than mechanical failure and wear must be found for retiring them.'—(*Chicago Daily News*, January 8, 1946.)

'Sure, when I deliver lectures I say crime doesn't pay. But that's for the little guy. For him, crime doesn't pay. But it's asinine to say crime never pays. I know too much about how some big businesses have been built up. I wouldn't ever say anything as silly as that.'—Joseph R. 'Yellow-Kid' Weil, the veteran international con man (now ex), whose police dossier goes back to 1905. (*Chicago Times*, December 28, 1945.)

The Valor of 'Free Enterprise'

Lets All Play Santa Claus

By Herb Robbins, 8439-1

Oh, Promise Me!

Sixty million jobs! This is the goal of our national leaders in the postwar era, a goal set up by a political promise on the eve of a national election. Well, it seems the promise was taken in good faith by a majority of Americans, who now expect the politicians to deliver. So, all right, that shouldn't be so tough, as it merely depends on what you care to define as a 'job.' The N.A.M. has taken a survey of private manufacturing and business concerns, and reports that we need have no fears in this regard, as industry in the past has always furnished one-fourth of all jobs, and will in postwar times be able to furnish better than one-fourth of 60,000,000 jobs, so there! Just as simple as that.

Reams of paper have been used to print the opinions, views and hallucinations of our tycoons of business, politicians and economists on this subject. No attention, however, is paid to the physical factors which will dictate the outcome of the whole mess. They 'view with alarm' the prospect that 60,000,000 Americans aren't going to be able to work like hell for one-third of their whole day, but fail to give any reason for this stand, other than the fact that 'Free Enterprise' cannot survive otherwise. Shades of Simon Legree! Better get away from that corpse, boys, it's getting ready to blow up in your faces from too much 'pump priming.'

Get wise to yourselves and understand that Technology will dictate the postwar status of 'jobs.' Being a com-

posite of physical phenomena under strict control of physical laws, technology is not amenable to the principles of democracy.

You know, of course, what Technology is. It is well represented in the shiny new machines which have been installed by the thousands in machine tool plants. It is visible to the naked eye in the South, where the new cotton pickers are already at work displacing men, women and children in the fields. You may have driven over some of it in an automobile if you have been on the roadways running over our immense power-dams. You will find it in the steel industry; in the office; in the coal fields; on the farms. Technology, that magnificent instrument of production of physical wealth, has become the dictator of America's destiny. It says to Americans 'Throttle me and you shall starve; operate me and you must find some way to distribute the abundance which I create, for I have replaced your customers.'

Forward, March—To Chaos

Being no respecter of persons, it cares not who holds the title of ownership, for it will work only according to its design and is unaffected by majority votes. What a boon to the Free Enterprisers if their views and hopes could regulate the velocity of Technology in its ever accelerating approach to its pre-determined impact on the rotted corpse of 'business.' If the politicians believe they can provide 'jobs' for the millions of people who have been displaced by Technology in this country, let them remember that these millions will constitute a political

majority, holding the political lives of the politicians in their hands, and they had better be jobs which carry remuneration equal to or better than that provided by private business. Under such conditions, one could improve one's social standing by going on the W.P.A.

Some of the plans to employ 60 million people in America in postwar times have reached that point of desperation wherein the authors can be accused of plotting a conspiracy against the American people tantamount to national treason. Mr. Henry Kaiser, that tycoon of business, recently suggested that America ship all of its rolling stock to war-torn Europe, thus enabling our steel mills and other shops to operate at capacity in replacing this equipment. We suppose that Mr. Kaiser is cognizant of the fact that this is a tremendous tonnage of steel to be taken from our dwindling stock of iron ore. Other propositions are coming across the board in rapid fire order to give America away to all comers. Of course, this will be accomplished through the expedient of making 'loans' to the respective recipients of our 'export humanitarianism.'

The statements of some of our national political and business leaders resound with exhortations to the dear public to 'preserve Free Enterprise' or we are lost. What a damning indictment of democracy this must be to the millions of men in our Armed Forces, who fought and died all over the world to defeat the military might of Fascism, to realize that our own fascist elements at home are planning to give away (for free) the resources which the foreign fascists have been planning for years to grab by force. This is to be done at the expense of American taxpayers, American living standards. We cannot slice our cake that thin without also eating a thin slice. It is

quite the time for Americans to regard national wealth in its correct aspect, for we are going to look mighty silly sitting here on a Continent denuded of oil, iron and other metals, each clutching in his hands a bundle of debt certificates, payable on demand or at some future date. What the hell do these monkeys think a high energy civilization runs on, paper?

Blessed Are The Peacemakers

Sixty million jobs in America will mean 60,000,000 suckers finally reduced to the level of China's 450,000,000 coolies. America's virgin timber is 80 percent gone. Free Enterprise has been here. In order to survive the last two decades in America, Free Enterprise has had to ship out of the country ever-increasing amounts of our natural resources in raw and finished stages, in exchange for gold, and other worthless items, so we could have 'jobs.' Yes, we must have jobs to support the Free Enterprises in their respective rackets of piling up debt claims against the general public, while they beat their breasts and yell 'democracy!' What democracy, may we ask? United States is a Federal Republic, and as such can harbor any form of government by the people of themselves.

We have never approached a democracy in this country, for no ordinary citizen of the great mass of Americans is ever permitted to vote for or against any fundamental issue concerning his or America's welfare. We have, for many years now, been 'sold down the river' by the oligarchs in order to maintain for ourselves that doubtful privilege of competing for an ever diminishing supply of 'jobs.' Faced with a gigantic unpaid leisure class after this war, the only out that the oligarchs can devise is to rehabilitate the world, industrialize the 'backward' nations with our immense surpluses of

machine tools and other technological devices. This is to be done in order to maintain peace in the future. Page Homer Lea and 'The Valor of Ignorance.'

Where are these 'backward' nations to obtain the energy to operate a civilization above that of European peasants? Obviously from us. In what form? Our oil supply has diminished to the point where it is now necessary to 'mine' it by digging a shaft down and under the oil-bearing sands and allowing them to drain through holes drilled upward. In Canada, a method is used whereby exposed beds of oil-bearing sands are steam-jet drilled and broken up to be transported to flotation cells, where the mixture of sands and hot water is forced into the bottom of quiet tanks of water, where the oil rises to the top. The 'black gold' of the Empire

Builders has dwindled to a strategic key resource. If consumption of oil in this country alone is continued at the present rate for much longer, we are not going to have enough to lubricate the machinery needed to install the hydro-electric dams which will be needed to furnish the energy for industrial operation.

Americans cannot ignore these physical factors, if we expect to survive as a nation. There is one way, and one way only, to stop this last wild fling of the Free Enterprisers. Technocracy's program of Total Mobilization for Peace will prevent our irreplaceable natural resources from being shipped out of the country. Shall we lose our national heritage in order that the Free Enterprisers may for a short while maintain the dying Price System?

Investigate Technocracy!

This Guy Is In A Real Mess

Someone had wired a Government bureau asking whether hydrochloric acid could be used to clean a given type of boiler tube. The answer was: 'Uncertainties of reactive processes make use of hydrochloric acid undesirable where alkalinity is involved.' The inquirer wrote back, thanking the bureau for the advice, saying that he guessed he would use hydrochloric acid. The bureau wired him: 'Regretable decision involves uncertainties. Hydrochloric acid will produce submuriate invalidating reactions.' Again the man wrote thanking them for their advice, saying that he was glad to know that hydrochloric acid was all right. This time the bureau wired in plain English: 'Hydrochloric acid,' said the telegram, 'will eat hell out of your tubes.'—Camp Livingstone Communique (*Reader's Scope*, January 1946.)

'He weighs 150 pounds, dies at 53 years of age, spends one-third of his life sleeping, is 67 inches tall, has a brain weight of 1,300 grams, and his pulse beats at the rate of 70 a minute. He has a 7,500 word vocabulary, leaves school at the eighth grade, and has a mental age of 14 years. He has a flat chest, round shoulders, and protuberant paunch. He is a mimicking monkey whose wisdom or intelligence is patterned by the copybook maxims of his school days.'—Dr. H. L. Hollingshead, professor of psychology at Columbia University. (As quoted in *The Messenger*, November 1945.)

'At present the ordinary man has the choice between being a wage slave and a scoundrel.' Betty Grable, movie actress (as quoted in the *American Freeman*, March 1946.)

Roll Your Own, Joe!

America Has Plenty of Makings

A Treatise for the Guidance of those Aspiring to Live Off
the Sweat of the Other Fellow's Brow. Quick and Easy
Method—How to Organize—How to Operate.

By H. V. Wilkie, 8342-1

In these postwar days there is a great deal of 'study being given to the subject of accumulating data and suggestions on a variety of business enterprises from which returning soldiers, or any one who happens to be looking over their shoulder, can get himself set up in something neat and attractive in the chiseling line. This 'down to earth' study for the aspiring ex-G.I. (and the guy looking over his shoulder) avoids all the customary moral, political and economic balderdash with which other 'studies' are loaded. It goes straight to the point, i.e., 'In what line will it be the easiest for me to chisel the most out of society and at the same time get away with giving back the least in return?'

That is the genuine spirit of 'free enterprise.' Why waste time clouding the issue or trying to camouflage the 'take?' In these few remaining 'latter days' of the Price System, a guy has got to get on the beam quick if he wants to belong to the blessed, microscopic minority who rest so softly on top of the social dung heap. Ain't it a fact?

What's Your Racket, Bub?

For the earnest student wishing to learn how to go about breaking into the charmed circle, nothing could be more helpful than to take a look at the methods and accomplishments of others. If you can establish a control over something that people can't live without, you have what is technically known as a 'red hot.' Next in line of descent would be control of what they think they can't live without. Then, what you can make them think they can't do without. After that, what will give them amusement or enjoyment. Next, what will protect them from harm. Following that, what you can make them think will protect them from harm. And, lastly, that ancient but still profitable line,

future salvation on a pay now and collect later basis. The above list is fundamental. No attempt has been made to make it exhaustive, or to subdivide the different headings into their many branches and off-shoots.

The name that has come to be most commonly applied to the business of exploiting the profit possibilities in these fields is 'racket.' A nice definition of a racket is: Any operation wherein an individual or group can take a cut off the needs, wants, desires or fears of their neighbors. Rackets have flourished proportionately with the growth in complexity of the social structure. In examining some prominent examples, the order in which they are presented need be no indication of their seniority.

Food, being necessary to life, constitutes a very meaty racket, and is referred to as 'a honey.' This is called the 'food racket' among the boys who congregate around the terminal warehouses. In this same category are clothing, shelter, health, education, transportation, communication, etc. The items people think they can't do without vary with customs, seasons and traditions. A good example of what you can make them think they can't do without is the current ballyhoo on vitamins. The list is long but this example suffices. And so on through the various categories.

From the simple process of supplying the primary needs of the earliest groups of people, there evolved such big operations as Standard Brands, Uneeda Biscuit, American Woolen, American Sugar, U.S. Rubber, Standard Oil, etc. The technique of all these operations is to make the package neat and attractive and pass out as small an amount of utility as possible for as great a price as the traffic will bear. Generally speaking, if it were possible to sell empty packages with no utility whatsoever, there would be no broken corporate hearts.

Let's Look the Field Over

In the matter of selling future salvation, one of our most honored activities, the field is by no means exhausted with the well-established institutions. It is a dull day when some one somewhere doesn't bring out a new brand of salvation with varying degrees of success. To become a 'New Messiah' or "Seventh Angel" requires only a vacant store, some sex appeal, the guts of a brass monkey and plenty of imagination.

Along with the growth of the salvation and subsistence business, there also developed what is known as the

'Service' occupation. This is a field of absolutely unlimited opportunity. Any new way that you can think of for doing something in this complex social maze of ours which people are too indolent, bewildered, busy or afraid to do for themselves, is bound to ring the bell. Many examples of how this luscious racket operates can be given. The lawyer can extract anywhere from one hundred dollars to a thousand dollars for drawing up a simple bill of divorce, sending a will over to probate, or thousands of other little acts that seem mysterious and amazing.

The legal profession has the charming attribute of dealing with people at a time when they are peculiarly helpless and emotionally befuddled. Thus the hapless victim finds himself with his life, his reputation, but more particularly his wordly goods, at its complete mercy. Think quickly, how many lawyers do you know who have lived a life of ease just milking one estate, or drawing up ironclad contracts for one corporation, or breaking ironclad contracts for another.

This is a range of opportunity limited only by the imagination of the operator. Since practicing (?) the 'law' unfolds such prizes, what more natural than to move in on the prerogative of making the law? No wonder Congress is often called a Soviet of lawyers.

Let Us Prey, Brethren!

Hush ye merry men in your rollicking! Have ye no hearts? Let us give thanks to the author of such beneficence! But who is the author? Surely we need another patron Saint in the calendar. Who should it be but Beelzebub himself, who leads men's feet astray and into our mystic maze? Nay, wait, the name's ob-

scure, let's shorten it to Boob. That's it—St. Boob—the author and founder of our art, for where would we be were it not for the great American Boob.

The lure here is admittedly dazzling but the competition is stiff and only the stout hearted get a firm seat on this bandwagon. A major output of all public and especially parochial colleges are contestants in this juicy plum department. Such endowed institutions specialize in turning out double-edged sharpies who swing a mean blade in the legal joustings. They are also properly indoctrinated to bridge the gap leading to ecclesiastical dominance in the educational field.

Sweetest Racket of All

Somewhere in the Elysian Fields there sits a king wearing a crown, a ten-pointed crown adorned with dazzling jewels. This king sits in eternal bliss, strumming the strings of a golden harp and humming softly the while, his whole being bathed in the sunshine of perfect content.

He invented the insurance racket! Ah me! 'Why didn't I think of that?' The dream that plagues the heart of every free aspiring free enterpriser is the dream of a racket operated on a 100 percent nothing for something basis. Rating high in this category are the Labor Union, the Pressure Group, Charity, Bootlegging, Hi-Jacking, Murder, Inc., and so on. One great drawback with many items in this bracket is that they are frowned on by the legal gents we have visited just above. They demand an inordinately heavy cut out of the pickings and even play rough, to the extent that occasionally some of the more vulgar and less accomplished operators find themselves in the 'Hoose Gow' or on the 'hot seat.'

Not so with the insurance game. It is respectable. It is staffed with gents who are polished and adroit. In its inception it ranked with the Confidence and Badger Games in what we righteously call 'outright swindles' and its great field was the uncultured and uncouth. The technique in the early stages was to keep practically all of the 'take' with only an occasional pay back of a few shekels with great publicity, just to sweeten up the pot. In their advertising today, the offspring of these lusty buccaneers use a hangover of the same tactics. They ballyhoo loudly how much they have paid back to the policy holders in the last forty years, or graphically depict their agent paying off poor widow Brown the thousand dollars that saved her from a life of shame.

This high spirited and carefree method went along swimmingly until a little after 1900 when *Collier's Weekly* with its expose, plus the Kemble cartoons, threw a cold analytical eye not only on insurance but on the food and drug rackets as well. The newspapers took it up and the resultant din stung our lawmakers into framing a batch of statutes, laying an even heavier hand on the practice of corporate vice.

It was thus, my kiddies, that thousands of our now most respected business institutions had a sudden change of heart, foresaking the black flag of piracy for the lacy mantle of 'free enterprise.' By assiduous application of the chiselers' ingenuity, the new front of chastity yields an even greater bounty than the old. Insurance as a whole now gives back 10 percent, 20 percent or even fifty percent of the 'take' and finds itself the very center of rockribbed respectability. It is still strictly nothing for something, because the only thing they have invested is the effort of selling the

great American Boob the idea that he is not competent to take care of his own money. How would you like to think up a little doosie like that?

A. B. C.'s of Chiseling

At this point, let's examine the fundamentals of 'free enterprise.'

The one basic attribute of business is to gain control of something that somebody else *wants* or needs. A prime consideration is that you will fulfill this *want* only on payment to you of your price. Therefore, the first care of every business man is to see that no one gets something for nothing. Paradoxically the best bait an enterpriser can use to snare fish (shall we say suckers) into his commercial net is to infer or even declare that he is passing out something for nothing. The insatiable appetite of the Great American Boob for this kind of bait explains the undiminished prosperity of the numbers racket, gambling, fire sales, auctions and Friday bargains, not forgetting to mention Bingo, the darling of every parish priest.

There are several schools of thought on the subject of just how to ooze, squeeze, inject or force oneself into a position of control and its concomitant of levying tribute, i.e., fee, profit, split, rake off, shakedown. Many favor the direct action method of simply moving in and taking over. This sometimes requires a little rough work, for which, fortunately, there is usually a plentiful supply of dim-witted plug-uglies. This method gained a quiet popularity as the social picture in America gradually congealed, and the oldfashioned flim-flam, three card monte and stock swindle, those sucker trimming rackets of an expanding economy ran out their string.

Prohibition, and the consequent

heavy booty available through supplying illicit liquor for illicit thirsts, provided a romantic outlet for the initiative of folks subscribing to the direct action school of thought. This activity also was popular with police, custom and internal revenue agents throughout the land. Many a deserting public servant now leads a life of peaceful retirement today in some quiet nook or (due to lead poisoning) reposes with his ancestors, depending largely on how skillful he was in estimating the size of the bite from which he could separate the prime operators.

'Do It First and Do It Often'

Regardless of one's individual viewpoint, it must be admitted that for sheer initiative, these enterprisers have seldom been excelled. Bootlegging, although a fairly substantial objective in itself, served also as a springboard for leaping into almost every conceivable kind of profitable commercial activity. Of course these rough and ready entrepreneurs dispensed with the usual preliminaries of opening up shop and cultivating a patronage. Whenever their eyes lit on a successful nightclub, labor union, string of bawdy houses, hat check concession, taxi stand, private detective agency, protective association or sales agent, direct action was employed. They politely but firmly invited the occupant to move over, or out. It was a case of either accepting the unrivalled opportunity to acquire a highly functional partner or becoming an ex-proprietor. The fate of those who demurred only served to heighten the general impression of high business acumen in accepting such invitations.

Al Capone became the legendary hero in this realm, and after years of hustle and bustle lives in quiet seclusion in a fifty room Florida castle.

complete with private yacht, lakes and all the fixin's. Al was out of circulation for a little while due to a little miscalculation about cutting the Washington boys in on his 'take.' He learned that it is bad business to hold out on these past masters in the gentle art of the shakedown.

The above is offered as analysis only, and not necessarily for emulation, because this field is fairly well nailed down by rugged individualists whose habit it is to forcefully repel intrusion. This does, not, however, slam the door of opportunity on private enterprise, since every little while there emerges some clever new device for putting on the squeeze.

Closely akin to such extra-legal activities, and not to be overlooked by the diligent student of ways and means, is the law enforcement angle. Since all human law is a species of blackmail ('you do what I say or else'), it is no more than natural that law enforcement should come to be by lineal descent the daddy of all shakedown rackets. No analysis is required here, since it must be self-evident that no commercialized vice can exist without the implicit consent of that branch of the constabulary whose business specifically is to prohibit such nefarious practices in a given area.

Since our purpose is to suggest some sort of satisfactory occupation to ex-members of the Armed Forces or any one else seeking a few fatherly hints on the facts of 'free enterprise,' let's glance at a few more intriguing devices for accumulating exchangeable currency before we proceed to examine a few probable solutions to the problem.

Whet Your Appetite on This!

From a simple printed notice of the arrival of a shipload of goods or

the offer to buy or sell a cow evolved that rose-colored world within a world, the advertising business. It is elementary that merchants even 'away back when' should find these notices more effective in luring the gullible when garnished with a little stretching of the truth or a few intimations not strictly in line with the facts. This lesson learned, it was only a few easy steps until these notices began to dominate the pages of every periodical published, not to mention fence posts, tree trunks, barns, out-houses, etc.

Now here is the point for the sharp student to grasp. Some bright boy went to the publishers and told them he could greatly increase their advertising patronage if they would give him a 15 percent discount on all ads placed by him. He then went to the merchants or manufacturers and told them he would make market surveys, edit and prepare copy and all sorts of other services (all for nothing) if they would turn over to him the prerogative of placing their advertising. Since the more space he could induce his clients to buy, the more commission he collected from the publishers, he put himself in the middle of some very handsome pickings. He was the father of the advertising agency. Thus was a forced draft put under the business of making 'everybody on Earth dissatisfied and wanting something else.'

The fact that publishers quickly learned their real business was the distribution of advertising is not surprising, when it is noted that the revenue from display space far exceeds all other income. If, in carrying on this business, they find it convenient to suppress or distort news or information offensive to advertisers, we should not be too hasty in condemnation for

what we don't know probably won't hurt us anyhow.

Bounteous Bereavement

When this fleshy structure we call the body parts company with its soul, mind, or spirit or whatever we choose to call the Life principle, the resultant mass is known in trade parlance as a cadaver. Its tendency to decay and become obnoxious poses a problem open to a number of solutions. If the environment abounds with scavenger birds or animals, removal of the remains to a sufficient distance to permit these brethren to perform their happy rites, offers a satisfactory disposal with a minimum of effort. Otherwise, burial in the ground or consumption by fire are indicated. At sea, of course, the solution is obvious. All this would have no place in our observations had we not somewhere along the line built up a set of sentimental and superstitious notions concerning the relic of the dear departed. Free Enterprise, quick to sense a golden opportunity, quickly capitalized on this condition by endowing this very necessary disposal with an endless system of rites, ceremonies, trappings and memorials.

The woodworkers, cement, metal, cloth and chemical trades, the florists, printers, stone-cutters, tent makers, auto builders, clergy, plus and double plus the mortician, all take a cut. Even the doctor gets a final fee for a death certificate. This is small enough recompense perhaps for the loss of a solid source of revenue. The innovations in this line have been endless, which should spell opportunity to the aggressive young man with a little imagination and less inhibitions.

Once Over Lightly

Since it is our intent to acquaint ourselves with the general technique

of profitable under takings by scrutinizing a few of them so as to get the hang of things, we should not overlook such steady producers as banking, blackmail, counterfeiting, small loans, money exchanging, etc. Because of the all too present temptation to become poisoned by one's own product, the Booze and Cigarette (plus others tobacco products) rackets have been by-passed. We might note that they employ several hundred thousand persons and several billion dollars of capital in their entirety. In spite of the fact that their entire contribution to the public weal is on the negative side of moral, mental, and physical depravity and disintegration, they are highly regarded socially because their very noxious status makes them open season game for the tax leviers. Because of this they are unwillingly the heaviest contributors to many a state, city and national budget. Temperance and moral uplifters work up hill all the way when they try to kill off the goose that lays this golden egg.

In an early paragraph we touched upon the principles of manufacturing, which can be reduced to the individual producing (as cheaply as possible) something that has eye or gadget appeal and vending it to the surrounding country side.

Not to be overlooked in a survey of this sort is the acquisition of special skills which folks will pay to see or hear you exhibit. Hence, the highly skilled art of purveying entertainment. The general principle of show business is analogous to peeking through the keyhole while someone undresses. For a consideration at the box office, we are permitted to view peoples' most sacred and secret emotions and in the right houses most of their epidermis too. The highway to success along this avenue

is piled high with the blanched bones of hams who saw only a shortcut to fame and fortune, and failed to note the days, hours and years of study, practice and development required for success.

Include Me Out

We could go on like this indefinitely, analyzing rackets and passing out valuable pointers. The list is much too long, however. There is just one further point we would like to call to your attention. That is the real difference between a racket and a legitimate business. The racketeer takes over a line, then builds it into a monopoly; after that he gets himself a private army to brush off and/or rub out competition.

In a so-called legitimate line, the entrepreneur builds up a business. Then he builds a fence around it with high prices, restricted production, buried patents, monopoly control and cartel agreements seasoned with political and legalistic legerdemain. So we see that the real difference between racketeering and good old 'free enterprise is mainly in refinement of methods and who got there first.

It could be that we are in error and that you are not really as keen about climbing aboard some passing racket as the ballyhoo would lead us to believe. When you see the hazy and backhanded way your Government approaches the idea of giving you a lift into business, you might almost think they don't want you there. But then the best they could offer the heroes of the last war was the thinly disguised beggary of selling apples on a corner! Maybe if we simply peeled off a few layers of bad conditioning, weird notions and false concepts, and took a factual look at our environment, we would not fancy

ourselves indulging in any of the behavior patterns we have just examined.

How About The Real McCoy?

In a spirit of adventure, let us suppose that we are going to investigate the real probabilities of our position in the America of the future. After the manner of Columbus, let us turn our backs resolutely on every preconceived notion and let the facts announce themselves as they appear one by one over the horizon of our awakened consciousness.

Turning away from the zany psychological jumble of greed, chaos, absurdity and idiocy which we call politics, finance and business, and training our mental binoculars on our actual physical environment, what do we see? First, we see a land whose fields, forests, mountains and streams possess natural and energy resources equal to the known resources of most of the rest of the world. Wow! The North American Continent has only 10 percent of the world's population and the lion's share of the world's resources. That sounds like luxury! And why not, because the next thing we see is a high energy social pattern, with the installed technology, the engineering skill and the trained personnel capable of producing all the goods and services every American can conveniently consume. A potential abundance is here now, for all.

Let's make believe just a little more, and suppose that we should put these resources and this equipment to use for the purpose for which it is logically intended, i.e., consumption. Today they are used to entrench and maintain a galaxy of anarchistic rackets, each preying on the other, and all leeching on the whole of society.

Is that the limit of human intelligence? Have we gone thus far and struck a dead end? Can't we conceive of ourselves as sufficiently sane to use our resources for the simple physical act of producing and distributing the abundance they portend? Let's go whole hog on this make believe game and suppose that we have enough sense to do just this! Then how would we go about it?

Since this is a physical and not a political or financial sandbagging problem, we would be forced to employ the only method we know for treating physical problems. We would have to use the methods of physical science. Here the one constant is measurement. Using this means, we would find that if we operated our productive capacity on a balanced load basis, we could use only the physical services of our adult manpower four hours a day, four days a week. This is enough work to produce and distribute to every individual resident of this North American Continent all the goods and services he or she can consume.

Accept No Substitutes

Let's get this clearly. *There is no physical reason why any American should be deprived of anything reasonably necessary to his complete well being!* That means complete security from birth to death is physically available here and now. The careful scientific analysis of compilation of data on our physical environment which revealed these facts covered a period of fourteen years of painstaking research by the Technical Alliance of North America (later to become Technocracy Inc.). This organization consisted of a number of engineers and scientists who were sufficiently clear-sighted to recognize that the impact of the vast technology and energy

output which we were pouring into our social mechanism must produce social repercussions.

They analyzed also the Rules of the Game of Price System interference control and made at least one startling discovery, i.e., *abundance destroys price*. Any attempt to distribute the technological abundance accumulating on this continent, by Price System methods could only lead to progressive disintegration which if permitted to run unchecked would result in chaotic social collapse.

This analysis is factual. It deals with no ideology, wishful thinking or consensus of moronity opinion. It bears no relation to the business and political tripe which the great American Boob is conditioned to gulp down in gargantuan doses without question. It is substantiated by masses of facts which can be verified by any American. In the light of the rapidly developing social instability, the program of Technocracy should be investigated by every American.

IT'S UP TO YOU, JOE

All this brings us rather squarely to the moment of decision. If we look the facts squarely in the face, we find there is a question we must answer. Since the pressure of advancing technology is undermining Business, Politics and Finance, why bother to have any part in the decadent rackets which we have just now so gently touched upon. Let's shoot the works in our make believe and suppose that we go 'all out' to usher in the age of abundance which is knocking so loudly at our door. Then what?

Wouldn't you rather have the abundance and security that can be provided from birth to death for every citizen and that would be guaranteed by the entire power of

duction increases, then levels off, and then dips.

3. New frontiers are few and far between. Monopolies, cartels and capital markets are ready to squeeze you into oblivion even before you get started. Little business shrinks relatively as big business grows.

What about the farm? According to the farm census of 1940, more than half of all farmers in the United States had a gross income under \$1,000. In the period of 1930-37, there were about 3,500,000 transfers of title to farms, about 1,500,000 of which were due to foreclosures, forced sale, bankruptcy, or tax sale. As a result of new machinery and better methods, the average production per farm worker in 1930 was 150 percent higher than in 1870. It is estimated that the normal requirements in farm production can now be met with 1,600,000 fewer workers on farms than in 1929. In the five Corn Belt States there were an estimated 25,000 tenant farm families, unable to find farms to operate during the 1940 crop year because of expansion of farm operations and increase in the size of farms due to improved equipment and mechanization.

Technology is the reason business enterprise is becoming obsolete. Busi-

ness is forced to use new machinery to decrease the energy cost and to increase productivity. This in turn decreases the man-hours, thus purchasing power becomes less and less. As purchasing power decreases, it is obvious what happens to business enterprise.

There are other trends to take into consideration, but they all add up to the same thing, the impact of technology upon the Price System.

You can do something about this, Joe. Not by being a sucker to the debt creators, but by being a part of the organization which will promote you into a chiseler through the easiest and surest way, i.e., science applied to the social order. The only way to be in accord with the technological trends is through technological methods. We on this North American Continent have the resources, the minerals, the equipment, and the skill to unite and operate a society of abundance for all. Why allow some chiseler to disillusion you into hitting your head against a brick wall? Why not go for the whole loaf, instead of the crumbs? Why not recognize the inevitable, the scientific approach to our problem?

Don't take our word for it—investigate Technocracy, and do it now. Time is Short.

We Have the Men

'It is the theory of capitalist enterprise that the use of private initiative and the assumption of risks, is the justification for private ownership and private property. But construction of government plants involved no elements of private capitalist enterprise; no private initiative, investment and risks, no production and competition for markets, sales and profit, since government provided the initiative and investment and an unlimited market, sales and profit. War plants are the creation

of public initiative and enterprise, the investment of public money. They are now leased to private corporations; but they are operated neither by owner-managers (in the overwhelming majority of cases) nor by the absentee stockholders, they are operated by technical-managerial personnel on a salary basis, and this personnel can do the same job in public enterprises.'—Lewis Cory of Antioch College in a talk at a conference of People's Lobby, Inc., Washington, D. C., Jan. 27, 1945.

Free Enterprise? Don't Make Me Laugh!

Three Examples and a Conclusion

By Chas. Hockenbrouch and Harley Merrick

'Them Was the Good Old days' by Charles Hockenbrouch

IN this land, our particular Price System is referred to as the system of 'free enterprise.' These days we hear that phrase quoted from all directions. What makes this system so desirable? Let us look it over. We are told that America has become great because of free enterprise. We lead the world in various forms of wealth, such as automobiles, telephones, railroads, and numerous other things. We lead the world in production and technology. We also had 12 years of hard times, which is passed off lightly as a mere 'depression' on the road to prosperity. What is meant by 'free enterprise'?

Let me give you an example from the City of Cleveland, Ohio. Some years ago, around the time of the gay 90's, a man named Humphrey made candied popcorn balls and taffy. He would pack them in a big basket, suspend it from his shoulder and sell it on the streets around our 'public square.' The cost was small and the profit large, so later he was able to open a store on the corner of the 'square' and thus do a bigger business, the energy of peddling goods going into making and selling more from his stand. Soon he was hiring people to do the work, and his income increased to the point where he opened the world-renowned 'Euclid Beach' Park. From these profits an ice rink known as the 'Elysium' was built. Here is a real example of what was known as 'free enterprise,' starting from a popcorn ball and finishing as a millionaire.

Born 50 Years Too Late!

Are things done this way now? Some people would be interested in having you think so. Let me give you an example of modern, up-to-date 'free enterprise.' During our 'depression' we had relief and WPA. Bakery wagons came to the WPA projects and sold small pies for 5 cents each. To one of these projects came a man, about 60 to 70 years of age. His wife made small pies which the man sold for 10 cents each. Being highly superior pies, this man began to squeeze out the baker. The baker reported this to the authorities, and there were no more good pies. To go into the bakery business, you must, first of all, rent a storeroom. You are not permitted to make food products in the home and sell them. You must get electricity, gas, water, a stove, and after you've gotten all of those things, then you must have the permission of an inspector before you can start. If the inspector for any reason refuses an O.K., your investment is shot. If he O.K.'s it, you'll have to pick up a lot of business in a hurry, or quit. Some expensive shoestring!

In Lakewood, a suburb of Cleveland, Ohio, there was an entirely different example of modern 'free enterprise.' A grocery company instituted a home service, with trucks stocked with groceries going from house to house. This was a convenience to the housewife, but at once a terrific howl was raised. What about the empty store rooms of the good taxpayers?

ugh!
How would they run the city without taxes, etc.? The result was that the Council outlawed the trucks. This is probably what is meant by 'survival of the fittest.'

From these examples it would seem that 'free enterprise' means starting a business and then building a stone wall around it. The 'good old days' when every one could be a millionaire (but wasn't) are gone. Peace be to its ashes!

Conclusion by Harley Merrick

We hear a great deal about 'free enterprise' and I'm wondering why it is necessary to take so much trouble to advertise anything obviously as good as its proponents say. Are the American people so ignorant or blind to anything so sound as 'free enterprise,' or are they being sold on the idea because it is good for them or is it because some who do not wish to reveal their identity expect to profit by it?

When we consider who wants to maintain the status quo, we must remember a few things relating to their case. Why did they not say something about 'free enterprise' back in the 'good old days' of installment buying, and the 'buy, buy campaign' and in the 'Stock Market Crash' with the depression that followed and continued so long? Why didn't they use the 'free enterprise' system to bring an end to the depression instead of leaving it up to the Government? Why don't they tell us all the facts about the 'prosperity' 40 percent of us enjoyed during the war at the expense of the majority 60 percent? This is bound to act like a boomerang and come right back to us in a more vicious depression than we have ever known, but we are not told that. When we hear a lot of bellowing, it is a good time to 'Stop, Look and Listen' and

see if we can tell whose ox is being gored.

Why is it that the 'Free Enterprise' boys would not turn a tap in production for defense until the Government stepped in and guaranteed a 12 percent profit on all war production? Eight percent was not enough. Why didn't 'free enterprise' exercise its freedom to raise the \$25 billion for plant and other expansion needed as war facilities? Now that the war is over, to whom will these plants belong, our Government or the profit boys who asked the rest of us to put the 'pay' in patriotism with blood, money and sacrifice, while they risked comparatively nothing?

Just consider who had an army of dollar-a-year men in various departments of our government and for whose benefit they were working. Also consider the number of otherwise capable business men who could not make a success of their jobs for the Government at salaries six to ten thousand dollars, and yet have gone into private business at many times that salary.

As a nation we could not exist half slave and half free. Neither can we continue to progress partly Government-operated and the balance by private 'free enterprise' only when it is guaranteed a profit without taking too much risk.

True to His Flag

'A man loves his country. He makes laws for the glory of his flag. He traces the outline of a national ideal he would like to live up to, but his stomach, his needs for trade, are essentially international. He is a patriot, and a sincere one, but when his money is concerned, he blissfully commits treason.' The late Charles E. Bedaux, industrial-efficiency expert and collaborationist, quoted by Janet Flanner in the New Yorker. (P.M. October 21, 1945.)

From Here On Out

Keep Your Eye On The Trends

By R. F. Novalis

Politicians may promise—
Philosophers may wish—
Liberals may believe—
Dictators may rave—
Economists may guess—
BUT
TECHNOCRACY has to know!

Sources of Data:

THE story is told of a statistician who used to open his lectures with the startling statistic that 50 percent of the teetotalers in a regiment in India the year before had died; then he would nonchalantly explain to his horrified audience that there were only two teetotalers anyway, and one was eaten by a tiger!

Most Price System so-called 'statistics' are similarly scattered and 'selected' for the sole purpose of confusing any one who wants to get at the facts of life on this Continent.

The so-called 'indicators' of business trends prepared by and relied upon by Price System economists are either:

- (a) Irrelevant and obsolete;
- (b) incomplete, by leaving out necessary data (e x a m p l e quoted above), or
- (c) loaded, by 'weighting' and 'adjusting' to cover up actual trends.

For example, one of the main 'barometers' of industrial trends, according to the economists, is railroad carloadings. The figures are printed in your paper every week. But they lose their significance when it is realized that one carload may contain 10 tons of freight and the next one 25 tons. Monthly

ton-miles of freight carried are more accurate.

Starting with this issue, the *Great Lakes Technocrat* will keep track of the blows technology gives the Price System in the United States, with a running survey. We will use as source-material the mass of detailed and individually reliable statistics published in the *Monthly Survey of Current Business* of the Department of Commerce, the *Monthly Labor Review* of the Bureau of Labor Statistics, and the *Monthly Bulletin* of the Federal Reserve Board. The necessary correlation into significant trends will be done by the Research Committee of Section 1, R. D. 8741.

None of this data (except unemployment) is printed in any Price System publication as it is here, because when you combine certain statistics which separately appear 'favorable,' they frequently provide good evidence of Price System disintegration. All the basic data, of course, is derived from Price System sources, which makes the evidence self-incriminating.

This dynamic (i.e., cause-and-effect) interpretation of data in such terms as 'man-hours per unit,' introduced by *Technocracy* originally back in 1932 and 1933, provides the most accurate method of determining what is happening and going to happen on this Continent.

Increasing Trends

Debt. Total Federal debt is given in terms of per capita dollars you owe, so that it can be compared to what your great-great grandfather owed, say. Owed to whom, is the question. Contrary to what some economists and politicians claim, we do not owe it to 'each other.' For example, approximately 11 percent of the U. S. Treasury's outstanding debt is held by just 13 private corporations, comprising 4 insurance companies and 9 banks. This amounts to \$25,716,000,000, which is greater than the total Federal debt in any year prior to 1934. As long as you're so curious, here they are, starting with the largest debt-holder:

Prudential Insurance Company
Chase National Bank
Metropolitan Life Insurance
Bank of America
City National Bank
Guaranty Trust Company
New York Life Insurance Co.
Continental Illinois Bank
Equitable Insurance Company
First National Bank of Chicago
Manufacturers Trust Company
Central Hanover Bank
Bankers Trust Co.

Note: Grand total U. S. debt, both public and private, is not kept up-to-date monthly, so we use only the Federal government's debt. Anyway, as Howard Scott, Director-in-Chief of *Technocracy Inc.*, predicted as far back as July, 1935:

The liquidity of all financial institutions will tend to increase toward 100 percent, while inversely the rate of interest will tend to decline simultaneously toward zero. These trends . . . result in *compelling the government to take over the prerogative of debt creation from private*

corporate enterprise, in order to create sufficient debt to save the existing debt structure . . . Technocracy, Magazine, A-2.

Since then, public debt has yearly become a greater proportion of the total debt, and by 1943 was greater than private debt, for the first time. Last official estimate of the grand total debt was \$338 billions, as quoted in the *Great Lakes Technocrat*, No. 71.

Enforced Leisure: The all time low in unemployment since the turn of the century has already been reached, 630,000 in October 1944. Two months later it was up only 50,000. Four months later it was up over 200,000. The all-time high was reported by the Russell Sage Foundation in November, 1933 — 21,000,000 persons unemployed. Current data is by the U. S. Bureau of Census.

It must be emphasized that there need be no relationship between a diminution in the total amount of necessary human labor, and of unemployment. The former is a direct consequence of technological advance; the latter results solely from human stupidity.— M. King Hubbert, in an editorial, *Technocracy Magazine* A-5, December 1935.

Machine Tools: Earliest accurate estimate of the number of machine tools in use in American industry was made in 1925 by the *American Machinist* magazine. Current production is added to the 1,711,100 total reported to be in use in January 1945 by the latest survey of the same publication.

Government Bonds: The ratio of government to total bond investments by our banks* and insurance companies** is a gauge of the confidence of private enterprise in itself; the less

*Source: Federal Reserve Board.

**Source: Life Insurance Association of America.

secure they feel, the more Treasury bonds they buy. Unfortunately for their financial standing, however, the interest rate on these bonds is less than that of corporate investments. Thus the crutch of Federal Government bond investments lengthens as the Price System's overall stability weakens.

Declining Trends

Production: The Federal Reserve Board's monthly estimates of industrial production, the only such indexes available, are a measure of *physical* factory output only to the extent of 42 percent (see Federal Reserve Bulletin, October 1943), while man-hours are used for 58 percent of the index! Inasmuch as *total man-hours* have been on the decline since their all-time peak around November 1943, and *man-hours per unit* have been going steadily downward since James Watt came out of his shop with a condenser for the steam engine (before 1800), the Board's economists are Dr. Jekyll and Mr. Hyding it by attempting to tie America's industrial progress to a factor which is now permanently heading down, regardless of whether production might increase for a short time. Perhaps you recall the late Stephen Leacock's character who 'jumped on a horse and rode off in all directions. . . .'

Incidentally, don't let the name 'Federal Reserve Board' lead you to the conclusion that it is a branch of the U. S. Government. It is actually a private bankers' organization. However, until we can work out a more accurate index, we shall be forced to make use of the FRB index of factory and mine production, in connection with the man-hours per unit estimate. Only 'unadjusted' index figures will be used.

Man-Hours Worked: The 1919-1920 monthly average total of factory, railroad and mining industry

man-hours was 2,540,000,000. We are now back down from the all-time peak (reached two years ago) toward that level of a quarter-century ago, and we will work even fewer man-hours as time goes on. This curve approximates the trend of net purchasing power the main support of Price System operating stability.

Man-Hours Per Unit: The number of man-hours required to produce one pair of shoes, or other commodity, a ton of coal or other mineral, a bushel of wheat or other crop, is now less than 16 percent of the average of what it was at the time the steam engine was introduced (before 1800), and under 40 percent of the 1919-1920 level.

Enforced Scarcity, i.e., Low Load Factors: Capacity estimates for a dozen important industries are used for this figure, but not the estimates of 'rated' capacity given by trade associations which are based merely on maximum profitable Price System operations. For the technological definition of balanced-load capacity operation, see pages 16 and 17 in the article 'America Prepares for a Turn in the Road,' by Howard Scott in *Technocracy Magazine* A-1. The most reliable method of determining what would be the 24-hour, 365-day maximum, theoretical 100 percent capacity of any industry, is by averaging the load factor on the electric motors used by that industry in the last Census year, 1939. This provides a close approximation of the load factor on the installed equipment, as electric motors are employed to drive practically all machines used in factories. If the flour mills of the nation produced 106,000,000 barrels of flour in 1939, but their motors were operated at a load factor of only .24 (as was actually the case), then the theoretical capacity was 440,000,000 barrels per year, or 36,600,000 per month. The mills

claimed their monthly capacity was 14,350,000 barrels.

Flour milling capacity having changed but little in the past five years, the average of 10,371,000 barrels milled in November-December 1944 thus amounted to but 36 percent of actual capacity. The same procedure was used in figuring the capacity of 11 other industries, plus mine smelter output, in some cases altering capacity estimates in accord with newly published changes since 1939. Railroad load factor is based on ton-miles carried in relation to the capacity of freight cars, and to the averaged speed freight trains actually moved in the months covered.

Of course, .95 is the practical (engineering) maximum load factor for any plant or industry, but that efficiency and correspondingly high living standard must await the arrival of Continental physical planning, which requires technological control exclusively, which means a *Technocracy*.

The Price System view of capacity was well summed up in October 1944 by Merryle Stanley Rukeyser in the

Chicago Herald-American:

As for 'capacity operation' of industry, it would be disastrous as a permanent policy. Industry needs some slack for maintenance and repairs, for fluctuation into temporary peaks, and for the rhythm of progress.

The word 'slack' used by this economist refers to the normal average of operations, which is near 5 percent of capacity. His 'rhythm of progress' would be Exhibit A for a student of semantics, for actually it signifies the Price System's 'prosperity and depression cycle.' It is during the depression period that business, helpless to control itself, is 'forced' to lower the ratio of production to capacity.

Interest Rates: Sources—Survey of

Current Business. Significance (see 'Debt').

Oscillation downward: As the peak of wartime production was reached in November, 1943, (and it will turn out to be the Price System's all-time industrial peak), the amount that factory output has fallen since that high point indicates the oscillation, perhaps the start of the last major one, into which the Price system is leading us.

History Never Repeats

The 'cycle' theory flew out the door when the steam engine, first large-scale practical converter of extraneous energy, was invented, but the economists still refer to current events in terms of cycles. See *This Week Magazine*, April 7, 1945. An examination of long-time trends in any basic American industry makes it obvious that this 'rhythm' is rapidly turning into the 'jitters.' Take pig iron, the basis for steel, which in turn is the basis of America's technological civilization and living standards.

The 1893-94 depression dropped pig iron output a mere 27 percent, although it was the worst the nation had ever experienced. In 1907-8 the next depression brought production down 38 percent, which in the 1920-21 postwar depression increased to a fall of 57 percent from peak to trough. In the last great depression, 1929-33, it fell 79 percent. In other words, each time production oscillates deeper, and toward a complete shutdown. We're on our way now toward the end of the Price System.

All 'latest' figures cover the latest two-month period for which data covering all series has been published. Some of the statistics are available only a week late, such as steel and electricity production, debt, etc. Although technological necessity has caused a slight speed-up in the collection of industry statistics, most are

still over a month late. An extreme example is the Bureau of Mines' annual report on total extraneous energy consumption in the United States, which is published nine months after the year is ended.

Averages for two-month periods are used, instead of single month figures, as this smooths out minor monthly ups and downs which would tend to distort the trend picture.

Furthermore, production and certain other indices here have been reduced to the monthly averages for the two years 1919-1920 as a 100 percent basis, simply because those years happen to mark the turning point in America's social and technological history. Economists, historians and other Price System interpreters still describe our chronology in terms of the year of

'such and such a politician was elected president,' 'this battle or that,' 'depression and prosperity' years, etc. As a matter of fact, some time during 1919-1920, these three curves (see basic chart, copyrighted by Technocracy Inc. in the *Technocracy Study Course*, or on display at any Section headquarters) —

- (1) Man-hours per unit,
- (2) Total man-hours worked, and
- (3) Industrial production

crossed; for the first time in human history.

This page will measure, by close approximation, some indications of the trend toward the final collapse of the Price System on this Continent, from here on out.

Technology's Impact on the Price System in the United States

Increasing Trends		All-Time LOW	Latest HIGH Figures*
1. DEBT (U. S. Govt.) per person.....	January 1, 1840—21c		\$1,875.00
2. ENFORCED LEISURE (unemployment).....	October 1944—630,000		890,000
3. MACHINE TOOLS in use** (cumulative total).....	1925	700,000	1,776,500
4. BANK LIQUIDITY (percent deposits to reserves, Federal Reserve Banks).....	1921	60.0%	95.15%
5. GOVT. (U. S.) BONDS to total bank invest- ments (Federal Reserve Banks).....	1929	39.0%	93.30%
6. GOVT. (U. S.) BONDS to total life insurance investments	1915	.0005%	60.00%
Decreasing Trends		All-Time HIGH	Latest LOW Figures*
1. PRODUCTION (combined factory-mine-railroad freight) Index basis 1919-20 monthly aver- ages equal 100.....	Oct.-Nov. 1943—250		224
2. MAN-HOURS WORKED (total of man-hours in factory-mine-railroad) (Note: 1919-20 month- ly average was 2.54 billion) Actual number	Oct.-Nov. 1943 3.14 billion		2.53 billion
3. MAN-HOURS PER UNIT in above industries, combined average.....	1919-20 monthly averages equal 100		39%
4. ENFORCED SCARCITY (load factor on installed capacity of above industries).....			25%
5. INTEREST RATES (combined average yield on Govt.-municipal-corporate bonds).....	1919-20	6.12%	1.80%
6. OSCILLATION DOWNWARD of factory output since all-time peak (Oct.-Nov. 1943).....			40% drop

**No figures available on number of machine tools scrapped.

*July-August 1945; two-month averages for latest period, all data is available.

Contract of Citizenship

So You Think You Think

By Roger Elgood, 12348-1

(PART ONE OF A TWO-PART ARTICLE)

Korzybski stipulates comparative estimates of the rates of development in the natural and technological sciences, and in those pursuits dealing with ethics, political science, and socio-economic organization—the first being represented by a geometric and the second by an arithmetic progression. Approaching the problem through an analysis of the concepts involved, Korzybski described the greater speed of the first as due to the essential economy and closer adjustment to natural fact inherent in the components of mental organization through which advance in that line has been made. Progress in the social sciences is shown as constantly impeded by primitive and autistic (phantasmal) thought modes—persistent infantile affective (emotional) identifications; the historical and politically perpetuated analogy between reactivity in the animal world and the 'predestined' limits of human social advancement; and the retention in language of terms preserving the affective and ideational content of outgrown racial levels.—Smith Ely Jelliff, M.D., in the "Journal of Nervous and Mental Disease, September, 1935.

I Promise To Pay

Have you ever approached our social problems this way? All agreements actually consist of two or more parts, embodied in one. The part of an agreement that is of primary importance to the thesis is said to be an 'Explicit' provision. The many contributing provisions are not stated specifically. They are *considered as understood* by all parties. These are a secondary part of an agreement called 'tacit' provisions. Tacit means implied but not expressed.

In most cases these tacit provisions are the actual material necessary to the act of fulfilling the explicit provisions. Consequently they cannot be treated as being subsequent to an agreement when they actually are the vital factors involved. However, it is in these tacit provisions that we find the innumerable avenues for escape from the explicit provision of an agreement. They can always be depended upon to leave an ideal field for subterfuge, chicanery, distortion and mendacity to be introduced later.

The principal leaders of the Allied Nations proclaimed that we must win the war in order to institute the four freedoms. This constituted an agreement with an explicit provision, i.e., the institution of the four freedoms. The war was won. Then, true to form, the tacit provisions of the agreement accomplished what was intended. They obscured the real issue. No political entity in the world was then, or is even now qualified or prepared to institute any social change that could make these freedoms possible.

No politician desiring to continue in office dares to pose publicly to his constituents or colleagues the blunt and obvious question on this subject, namely, what is the fundamental reason for insecurity when we have an abundance of available goods and services? No, now the war is over, we will discover the slogan of the Four Freedoms to be only what it always was: A phony agreement, very well understood by the national leaders of this Continent to embody so many vague tacit provisions as to render any political at-

tempt to institute the so-called explicit provision absolutely futile.

Thus, in this world-famous or infamous slogan of humanitarianism, the concrete parts of the implied understanding were ignored. The physical facts were not investigated. No definition could be given to security because all that goes to make security possible was left in the form of numerous loose, easily evaded issues, of which there was no mutual understanding whatsoever. The implication was, in effect, that some miraculous way would be found to accomplish a gigantic change without changing anything.

Pig In A Poke

By this evidence, the function of the slogan stands out barefaced. It was itself a subterfuge. The greatest prize ever dazzled before the eyes of humanity constituted in reality either a piece of pure chicanery or ignorance of known facts. It is obvious something is amiss, for one year later we have still not started to solve the problem.

Unfortunately, what constitutes freedom from insecurity of *all* the peoples of any country (except on the North American Continent) has never yet been established as a fact. Elsewhere, freedom from insecurity still remains largely an abstraction of the mind. To begin with, the words 'free' and 'freedom' were and are labored to the point of having no *real meaning*. Any realization of liberty and freedom invariably entails some form of obligatory discipline by the freed. For instance, if we want freedom from traffic snarls at our busy intersections, we must all submit to the regulation stop and go lights.

In order to be mutually beneficial,

the concept of economic security for all citizens must conform to the primary needs of every one for exactly the same reason as the example above, to reduce confusion and danger to the minimum. The crucial point of the whole subject of economic security lies in formulating a concise definition as to what is meant. In the specific social agreement we are going to discuss, unless there is a common understanding of what is meant, how is it possible to lay any foundation for carrying out the agreement? It is impossible. Of course, a predetermined understanding leaves out the inexplicit quality found in legal and political agreements. The way is closed for misunderstanding if we arrive at an agreement on the definition of the term by reaching a common understanding beforehand.

This can only be done by reducing the primary elements of the problem to facts. The time has arrived when it is imperative that we *know* exactly what we are talking about when we discuss such a vital thing as security. To avoid further confusion and chaos, this certainty of knowledge has become an essential obligation. This is not an opinion. The facts indicate security would be for the best interests of human safety and affairs. We installed the intersection signals *after* the traffic dictated they were necessary. To allow the opinion of motor drivers to prevail in the expectation of comparative safety to all at intersections is identical to discussing security by the political method. Under existing conditions, the most anyone could promise, or wildly hope for, regarding security is exactly nothing. In spite of the prevalence of mendacity and distortion in the news, the press and the radio are proving this to be so more emphatically every day. Security decreases as unemployment increases.

Approaching The Problem

By what method *can* we approach a problem with the magnitude of freedom from insecurity? A problem is a question for solution; a proposition requiring something to be demonstrated. The proposition put forth in this article is to demonstrate the futility of our expectations of achieving economic security by a political solution. There are two ways to approach problems. One by the every day non-scientific or political manner. The other is the engineering approach. The political manner of approaching a problem is actually a retreat. It is not an approach at all.

In politics the solution to a problem is put forth in the form of a definite *opinion on a matter as being the solution itself*. In other words, politically, we do not approach the problem from the question toward the objective, but from a predetermined solution back to the question. The so-called analysis merely consists of a defense of a certain course of action already taken. The political-democratic practice of putting forth two opposing 'opinion-solutions' merely enlarges the scope and consequent complexity of the subordinate opinions offered in defense. The technique of both factions is identical, consisting primarily of a careful study to exclude every item of relevant factual knowledge which would be antipathetic to the pre-decided solution, stated as a matter of opinion.

The engineering approach is the antithesis of this procedure, in that the solution is determined by the logical sequence of all the known facts of the case to uphold the course of action as it takes place. The result of this action is the engineer's solution. It may not be the desired result, nevertheless it is the solution by impartial analysis.

Nature of The Problem

The principal tacit agreement of a political democracy is to provide a safe margin of consumer goods for the well-being and good health of its people. **THIS IS THE PRIMARY DUTY OF THE STATE.** Until it becomes the prerogative of every citizen to have the privilege and where-withal to consume, regardless of his position in society, no semblance of security or freedom from fear can be approached.

It is a fact that *all* citizens require a comparatively *equal* amount of goods and services in order to be well fed, well housed and well clothed. The power and privilege to consume (security) has always been the prerogative of a few under the Price System. Security accrues only to those who have the ability to channelize the flow of goods and services into their hands, regardless of the degree of contribution they make to society, or the methods employed. Indeed, this ability is our measure of success today. The qualifications of this segment of society is a complete lack of any sense of integrity, accompanied with astuteness in Price System manipulations.

Man's greatest danger today comes from himself. The malignant thing that is keeping us a slave to a dead era is our apathy and inertia. We resist any effort to overcome our inherent prejudice against any departure from our habitual *everyday thinking process*. Our ability to reform our points of view to changing circumstances is far behind the rate of change taking place in technology, with its impact on our social setup, and its attendant insecurity.

At the moment, on this continent, our direction of thought relative to the proper (functional) distribution of our available goods and services is pitiful. The degree of change in the means

whereby we live has been gigantic in the last 160 years. In what way have we changed our scarcity attitude or aspects? Not at all. Our conduct of thought still resembles a mingling of the medieval ideology of authoritarianism, with the scarcity concepts put forth by political economists in the 19th Century.

The result of this ghoulish monstrosity is what we now employ as an 'attitude of mind' to decide business and political matters affecting the whole Continent. We are reluctant to perceive and act in accordance with the obvious arrival of a new era. We hide the real nature of the power age behind a wilfully false perspective. In this manner, we isolate the obvious course of procedure from contact with any other attitude of mind save the habitual avenue of approach. This excludes the essential mental quality that must precede the act of replacing social confusion with order and system. It is this 'quality' of mind that conforms to new conditions that must take its cue from the events and things which go to make up these new conditions. It is the 'scarcity attitude' at the thinking sources that is fundamentally opposed to an adequate solution to our social problems.

We have growth, real and tangible, exemplified at every turn: on the land, on the sea and in the air; in our power houses, factories, laboratories, drafting rooms and hospitals; on the farms, in the woods, mills, and mines; at the source of every means whereby man lives. We brag about a possession, the function of which we fail to even define in lucid terms, merely to satisfy our tenacity to a concept of evaluation which is adequate only for scarcity. This does not make sense. We are trying to 'ASSOCIATE' the ideas of scarcity and abundance. It cannot be

done. That is why we are frustrated at every political turn.

Opinions or Facts

Let us consider what actually is at the source of this vast array of Twentieth Century wonders about which we brag. Science is the methodology of the determination of the next most probable result, through observation, research, experiment, close agreement and verification. As such, it is a method of applying thought. Our twentieth century wonders are interwoven with this quality of thought. To the engineer and technician, the symbol 'FACT' denotes the matter has been tested in the crucible of the above method. This is the 'functional culture of mind,' typical of technological advance.

Compare this scientific method with the basis on which the control and distribution of our possessions rest, the non-scientific. Firstly, the latter has no boundaries. It can and does venture outside the realm of reality. Since only that which is real can be measured, it consists of opinions. These are the embodiment of disagreement. There can be no uniformity of agreement to an opinion, for three specific reasons. Each opposing opinion is challengable, each can employ the unreal, and each can and does use loose definitions for definite statements. This is the reason it is possible to opine two solutions of one specific problem. This is the embryo of national confusion and failure to solve the problems involved for the realization of security.

Political agreements running counter to physical facts denote they cannot be fulfilled. It is a case of our credulity giving the green light to the politician, and physical facts flashing the red simultaneously. Credulity may be irresistible to you, but physical facts are irresistible to all supernatural concepts.

So we come to a condition which must be acquired, to allow the installation of a modern civilization characterized by *complete economic security*. This condition is the development of a functional culture of mind in order to comprehend the problem with which we are faced.

It is so easy and so convenient to go astray at the very source, the conduct of our minds. Some understanding of fundamentals is necessary. The difference of thinking technique does not lie in the degree of thinking ability. It is the *quality* of thinking which makes the difference. A short review of 'the material of thought' proves this to be so.

How We Get Ideas

Through the act of perceiving by the various sensations, the mind acquires percepts which it is able to retain through the faculty of memory. By putting percepts together, we form concepts. The next step is our ability to use our memory for the association of concepts, forming a relationship between them which results in an idea. What governs the activity of the mind is interest. Thus, when our interest is to create a false impression, facts must be wilfully ignored. On the other hand, where the interest is solely for impartial and strictly accurate results, mendacious mental activity would be futile.

These are two distinct means for two distinct ends and not two means for the same end. This is the distinction which occurs when formulating a political agreement of economic security, and a security based on fact. One method talks about what it doesn't mean, and the other means what it talks about. In order to think and form ideas with any degree of exactness and coherence, we must confine our thoughts within the scope of

our perception of the physical world as we know it exists. Any thought outside of this sphere is imaginary (imperceptible) and leads only to confusion and nonsense.

It is a splendid idea to decide how you are going to get somewhere before you decide to go. There is no point in saying: 'I have decided to cross the Atlantic by railroad train.' This statement is a disassociation of ideas, an incompatibility of otherwise normal concepts. It asserts something to be possible (i.e., perceptible) which is impossible (imperceptible, non-existent). The engineer is trained to adhere strictly to certain rules because he is interested in accurate results only. Therefore, all his rules hinge on a postulated universal method of approach. In other words, he has decided by what means his mental activity is going to travel *before* he sets out. From a close agreement of observations, we know just how the present leaders of the North American Continent decided they would travel to institute security for all here at home. They decided to go by hot air!

In the United States alone in 1944, with over 27 million of its civilian labor force withdrawn from the production of physical wealth for civilian consumption, the country was still able to produce and consume its all-time high record of civilian consumers' goods, \$92 billion. Yet, the only kind of security that the politician can conceive of is one of *full-time* employment or 60 million jobs. This, in the face of the fact that the only way to produce more and thus get more security is to work less!

Such thoughts (?) are incompatible, disassociated, absurd. *Technocracy* proposes to replace the defense of an opinion by other incoherent opinion with the assault of fact by the coherence of other facts. Thus, we have

two distinct techniques of thinking demonstrated by their result in contemporary application. Technological progress versus social confusion and insecurity. Each is the result of extreme polarities in the type of thought applied to them.

In facing any vital problem, to determine as a matter of opinion that which is easily determinable as a matter of fact means only one thing. The motive is to deceive, either ourselves or others, possibly both. There are two excuses, self-interest or downright ignorance. Another reason might be sheer lunacy. Surely the fear that a Continent might lose its status of *insecurity* could only be construed as lunacy.

Our 'attitude of mind' happens to be the true pericenter around which all

results of thinking rest. For example, we preclude a factual conclusion in every field of social endeavor toward stability, except when it is approached by the scientific method. Until we revive our attitude of mind and comprehend the difference between facts and opinions, treating each as such, we can only further complicate, never solve, our problem. The contemporary manner of attacking the complications in a like manner is itself an admission of defeat. Every attempted political solution constitutes a deliberate introduction of interference. The substance of these attempts is found to be largely that of supposedly worthy, though out-dated, precedent. Precedents can be a snare and delusion. Analysis alone can prove their worth or unworth.

(To be concluded in our next issue)

Pre-Columbian Americana

'No wars for 200 years. That was the record of the great race of Mayan Indians of Middle America, who more than 2,000 years ago developed one of the most prosperous societies the world has ever seen. Today their descendants, at least two million strong, continue to live and work in Guatemala, south Mexico, British Honduras and Honduras.

'The ancient Mayans were great mathematicians. When Columbus sighted the shores of Middle America his calendar is said to have been at least eight days in error; but that of the Mayans was exactly right. The people were master farmers, and put their mathematical genius to practical use. A thousand years before the discovery of the New World they had developed methods for recording on stone the appearance of a plant, its seasonal character and time of ripening, its food or medicinal value, and other details.

'The Maya Indians were the first in the world to use rubber, which they ob-

tained in Yucatan. Utilizing it much in the same way as we do today, they water-proofed shoes, moccasins, and all kinds of clothing, and also used it for tipping drumsticks, and for protecting other everyday tools.

'Another first we credit them with is cotton clothing; and we are indebted to them still for our supply of chewing gum, the basis of which comes from the chicozapote tree native to Middle America. It is probable that the Maya chewed gum for countless pre-Columbian centuries.

'The great epic of Maya agriculture includes numerous herbs and medicinal crops, among them the coca leaf, from which cocaine is derived, also quinine and cascara sagrada. Henequen, used in making twine, rope, cloth and other strong textiles, was and is another great Mayan staple.'

(From news release of Middle America Information Bureau, conducted by United Fruit Company.)

Be Your Century!

By Miriam Allen de Ford

Reprinted by permission from *Your Mind: Psychology Digest*, February, 1947

The author of this article is a well-known writer, who has had many stories and articles published. She is not a Technocrat. 'Great Lakes Technocrat' is, however, happy to reprint this article because of its clarity and simplicity of presentation and because it is in intellectual accord with the facts of this Power Age, in which we live.

THE famous Dr. Thomas Arnold of Rugby, father of Matthew Arnold, died in an attack of angina pectoris, in 1842, because by the time a servant could summon his physician it was too late for treatment. Yet prompt action will nearly always bring a patient through an angina attack. There must be millions of men and women who died before their time in the days before the telephone was invented.

I remember the startling day when I discovered my roof blazing. I ran downstairs and phoned the fire department, and in three minutes by the clock the engine was at the house and busy extinguishing the fire. Several years before that, I was a guest in a house in the country which had no telephone. When the chimney caught fire, my host, an elderly man in poor health, had to climb out on a steep, sloping roof with buckets of water while I ran half a mile to the nearest neighbor to ask for assistance. It was by the merest chance that the house did not burn down.

This is not an advertisement for the telephone company. I instance it only as one of the most obvious of the mechanical helpers by which we are surrounded and which we take for granted.

And we forget how very fast they have come. If it is three generations from shirt-sleeves to shirt-sleeves, it is also, and literally, three genera-

tions, from oxcarts to rocket planes. The speed with which material inventions have piled up on us, who are mechanically the heirs of all the ages, extends to the most trivial household equipment. My grandmother told me once that when she was a little girl in school in Philadelphia, a boy brought and displayed during recess some mysterious objects—little splinters of wood, which, when he rubbed them on a brick, burst into flame. They were the first matches she had ever seen.

We have had more material progress in the past twenty years than in the two hundred preceding, and more in the past century than in the preceding millennium. Any person who has reached middle age can remember very clearly when the ordinary light was a Welsbach gas burner, when bathtubs were made of lead or tin with a wooden rim, when cooking was a matter of course accomplished on coal stoves, and ironing was done with a sad-iron that had to be kept hot on the fire.

In other words, it is commonplace to remark that we live in an era more advanced materially than any this planet has ever seen. It was a commonplace even before we entered the Atomic Age, little more than a year ago. But what, one wonders, is the use of living materially in the twentieth century if, like millions of civilized people—even civilized young

people—we live economically in the nineteenth century, politically in the eighteenth, religiously in the seventeenth—and emotionally in about the two hundredth century B.C.?

Unless our minds are at least as modern in their viewpoint as our bodies in their surroundings, we are not synthesized personalities at all, but boiling cauldrons of antagonistic ingredients guaranteed to give acute indigestion to anyone who must swallow the mess.

There are of course in every country many persons who live mentally and emotionally not in the twentieth, but in the twenty-first century or later. They are the vanguard of humanity, the "social anticipations." But they are outnumbered millions to one by the rearguard, what an acquaintance of mine calls "the hangovers." And what the social anticipations usually receive is persecution, suppression—and posthumous admiration. That is a deplorable human tendency which has dotted history with martyrs.

It can hardly be expected, naturally, that all or many of us can be ahead of the times in which we are born; though we must have some forward-lookers and pointers if we are to progress—and unfortunately it is apparently inevitable also that we should make their lives a burden while they live and surround them with glory after they have been dead a sufficiently long time. But we can at least make a conscious effort to increase the number of persons who have minds contemporaneous with their bodies, their clothes, and their furniture. We can begin by examining ourselves and seeing how far we fall behind our times.

I am thinking of a number of such spotty personalities whom I have known. There is Horace French, who is most enlightened and tolerant in

religion, whose political views are broad, who is self-controlled and urbane, yet who at home plays the heavy father and the master-of-my-own-house - and - pocketbook husband. There is Marston Green, clever, witty, keen, who yet believes and argues that only "Nordics" are really human, and that all the rest of us belong to some sub-species which may be treated kindly but must be given no liberty or power. There is my old professor of psychology, who was fully acquainted with the most modern schools and techniques, yet who was himself a hide-bound Calvinist of the most Puritanical persuasion, and who once secured the expulsion of a student for a breach of convention obviously due to a psychological quirk needing therapeutics, not disgrace, for its cure. There is Mary Minton, who prides herself on reading all the latest books and seeing all the latest movies, yet will not walk under a ladder or sit thirteen at table, and honestly believes the constellations are interested in her welfare.

Not one of these cases is that of a person in harmony with his environment; every one of them lives materially in the twentieth century, but mentally and emotionally in some past period beyond which the best thought of humanity has long ago advanced.

Fantastic romances have been written of the sudden resurrection, by some imagined means, of long-dead men and women—ancient Egyptians, Periclean Greeks, men of Cro-Magnon. Well, if by some necromancy such a man of the past could come to life again in the fifth decade of the twentieth century, he would indeed be a bewildered stranger so far as every last detail of material being was concerned; he would have to learn the mechanics of living again from the ground up. But once he had acquired means of communication, I am afraid

he would feel quite at home with many of his new companions as far as their social, economic, political, and theological ideas were made known to him—and he would perhaps find himself quite superior to many of them in matters of self-discipline, tolerance, and humanitarianism. A truly civilized community is one in which, if such a traveler from the far past could conceivably appear, he would be as hopelessly outdistanced in mental concepts as in the practical mechanics of life.

The means to attain real and complete contemporaneity is a process of re-education, above all of self-re-education. But it depends first of all on our awareness of our present failure. We could not be comfortable in the physical world of our grandparents, and we ought not to be; it is not our world. It is up to us to ask ourselves, in every attitude and opinion and emotion, whether we are being comfortable in the mental at-

mosphere which surrounded that world.

Evolution may take place backward as well as forward; actual progress is always conscious, so far as human affairs are concerned. We must—each of us parts which go to make up the whole—strive to “be our century” in every aspect of our lives. If we do not, we may (with or without benefit of the atom bomb) prepare, or even witness, one of those cataclysmic reversions which the world has seen before; and the wholeness that is necessary to social adjustment may come about in the worst possible way for human welfare—by bringing the twenty-first century full circle back to the standards and attitudes of the Dark Ages.

We must live up to our telephones and radios and airplanes and laboratories, or we may find ourselves again in a material world better adapted than this modern one to our atavistic minds and emotions.

One World?

A census of the chief delegates of 45 governments to UN (there are 55 members) reveals that 40 percent of them are Roman Catholics, 20 percent Protestant, 15 percent Moslem, and 25 percent Orthodox Christian, Buddhist, Brahman, Non-believers and miscellaneous.’ (*United Nations World*, February, 1947.)

‘Top leaders of the Koumintang in China are reported to have cashed in American banks \$500,000,000 in “black market” gains, usually earned from control over distribution of UNNRA and surplus American war goods. Greek right wing leaders are estimated to have \$50,000,000 of the same type of funds deposited in American banks.’ (*Christian Science Monitor*, March 21, 1947.)

‘The economic illiteracy of our people

has been fostered by the demagogic politician’s thirst for power. He has been completely brazen and shameless in fostering false theories of economics. He will do anything and promise anything for votes. By twisted reasoning, by the nurturing of prejudices, by fantastic promises, by false accusations, the political demagogue leads the people deeper into the black night of ignorance for the sake of his brief appearance on the political stage. He is a most dangerous type of fifth columnist, ready to destroy for his own belief and tainted glory, the well being of the many.’—Ody H. Lamborn, president of the National Association of Commodity Exchanges and Allied Trades Inc. in a talk to the Purchasing Agents Association of Cleveland, October 17, 1946. (As reported in the *Chicago Daily News*, October 18, 1946.)

Logistics of Social Change

Prepare For My Coming!

By Geo. B. Connor, MAL

We Americans are beset by a social impasse which is warping the life of every individual, rich or poor. In an atmosphere of confusion we are avoiding our social responsibility in the same manner the Chinese frightened away their devils—with loud noises and paper decoys. The difference is that in our case the paper decoys are debt certificates; and the loud noises are the blah that is dinned out from press, pulpit, radio, political rostrums, counting room and business house. If a social catastrophe of major proportions is to be averted, we must embark upon a decidedly different course of social procedure than any which has previously been pursued.

'None So Blind—'

FOR 70 Centuries of recorded Price System history, men have delegated the privilege of social control to the priest, the politician, the prince and the profiteer. The best result this string of incompetents has been able to achieve has left its stigma upon humanity in the form of beliefs, ignorance, warfare, waste, poverty, crime, fear, tradition worship, race discrimination and social stupidity. The last named is perhaps the acme of infamous social perpetrations. It has created a barrier of prejudice that is well nigh impenetrable for those who are qualified by ability and training to make constructive improvements in the arrangement of social, cultural and material conditions under which men must live. If your better judgment is in rebellion against your past conditioning and the pressure of your immediate personal entanglements, then you may ask: 'What about it?'

An impasse can be vanquished only by knowledge. Knowledge is based upon understanding. And understanding comes by the rigorous road of factual study; by careful consideration, wholly unfettered with either prejudice or emotional friction. This is something often preached about

but seldom practiced. Technocracy would like to bring to every American an understanding of the unique problem confronting this Continental area. It can only be done with your assistance.

Our social difficulties are due almost entirely to the failure of our present, obsolete method of distribution, the Price System. We are so engrossed with the many issues arising from this failure, strikes, fluctuating prices, business uncertainty, crime, poverty, political skullduggery, etc., that we take no serious notice of the basic factor that is the cause of the whole disturbance. We are always on hand too late with too little. We lock the barn after the horse is stolen. We prepare for war after the enemy has struck. We start conservation after the soil is gone. It would seem, by this evidence, that we detest anticipation, but that is not entirely the case. Preparation costs money. That is the point of major interference. The barrier to correct social action is Price. Now that the System of Price itself is disintegrating before our very eyes, all we can think to do is to bolster up the carcass. We try to keep alive a social institution which has brought nothing but misery and discord to humanity since

the day of its inception. Dare we ANTICIPATE its end? Dare we PREPARE for the event of its demise?

Far as Human Eye Could See!

Emphatically YES! It is the one sensible thing to do. When a method of distribution is no longer capable of performing its function, another must be prepared to take its place. *That has already been done!* The new one stands waiting for your approval. It is ready for installation at any time. *Technocracy* has the design.

Technocracy is North America's only collective, social insurance policy. The premiums must be met to keep it in effect for the day of its necessity. Those premiums are your attention, your understanding and your cooperation. If you are not a member of Technocracy, you are helping to void the chance of abundance for America. You are doubling the difficulty of social transition. You are approaching the inevitable with wishful thinking. Your inactivity is adding fuel to the fires of internal conflict. It is imperative to your future and to our future that you investigate this situation. Otherwise, we don't care a rap how you act or what you think about.

Technology has made possible an abundance of everything for the people of North America. The Price System is the sole interference preventing that abundance from reaching those who can take it into usage, all of us! **THE DISTRIBUTION OF ABUNDANCE IS FUNDAMENTAL!** Upon its successful accomplishment rests the future of our civilization. Once we can persuade ourselves to bring our intelligence instead of our emotions to bear upon this subject, we cannot help discovering that fact.

The distribution of abundance is new in the annals of human history.

Being a new problem, it demands an entirely new set of concepts for its solution. That means PREPARATION. That means putting a definite end to our procrastination. The distribution of abundance lies outside the orbit of political, financial or ecclesiastical control concepts, either of the past or present. It is a technical problem, and as such falls automatically within the domain of science, and upon the agenda of the technologist and the social engineer. It is a problem endemic to North America and the solution must likewise be a native product. No foreign influence or ideology is desired or needed, and none need be tolerated. Only an American solution can fit the American problem. Nothing less can be considered adequate. Nothing less will be found acceptable to the people of this Continent.

Technocracy fulfills every specification necessary for the job at hand. Technocracy has correlated all available knowledge pertinent to the American social dilemma. Technocracy has recognized the nature of the problem; has anticipated the course of events; has devised the only solution which can successfully be applied. Technocracy is American through and through, and is preparing to meet the emergency when it arises. Technocracy rings the bell on every count. Can you name another Organization or movement on American soil that does the same? If you can't then how about a helping hand? Not next week, or next month, or next year—but NOW!

'A sign on a cage in the Buffalo, N. Y. zoo reads as follows: "Bald Eagle—range: the whole of North America. Never fishes for himself as long as he can rob the more skillful and industrious fish hawk. The bald eagle is our national emblem."' (Fillers, March, 1947).

"What a Good Boy Am I"

The People versus Business

By Sgt. Scoop, R.D. 8943

'You are old, Father William,' the young man said,
'And your hair has become very white;
And yet you incessantly stand on your head—
Do you think, at your age, it is right?'

'In my youth,' Father William replied to his son,
'I feared it might injure the brain;
But, now that I'm perfectly sure I have none,
Why, I do it again and again.'

(Lewis Carrol in 'Alice In Wonderland')

Good Business Is Good Waste

IT IS axiomatic that among mortals hindsight is more accurate than foresight. Hindsight cannot be laughed away, however, for what we see through it may be what we need to make accurate predictions of things to come.

Unfortunately, there are multitudes in America today who have spent so little time in looking back upon the record of business techniques that they cannot realize what fate will befall America if 'good business' holds sway much longer.

We don't need to be in a military war to be actively patriotic. Now is an ideal time. A little looking backward will make it obvious that business success and patriotism are incompatible. Let's look at the record for the past few months.

A simple and daily example of the unpatriotic waste that is the result of good business can be seen in almost every magazine and newspaper. Business made flagrant waste of newsprint, press time, labor, brains and other necessities in putting out its institutional advertising during the war.

These expenditures were made by companies that had no goods to sell.

They were merely keeping their names before the public. They were doing it with the public's money. In spite of abundant evidence that these companies were profiteering from the war, the public blindly accepted mass advertising of the great producers as a patriotic activity. In fact, the public paid for the advertisements in which the advertiser unhesitatingly told how patriotic he was and how he was winning the war.

Testimony in the widely discussed Garsson munitions combine inquiry showed how manipulating individuals siphoned off the people's money, with no compensating service rendered. The Congressional investigations brought to light lucrative dealings of such self-styled 'public relations counsels' as Benjamin F. Fields, Glenn A. Dies and John F. Brunner. These, with others of course, were shown to have been 'milking' the too-cooperative War Assets Administration.

However, the profits of some individuals is not the serious part of the issue of business versus national patriotism. Profiteering deals, multiplied in high and low places, create and maintain shortages, for example, of houses for Veterans. They cause

Call for Miss America

Are Women People?

By Louis Verhovic, 8141-15, and The Peripatetic Technocrat

They talk about a woman's sphere as though it had a limit;
There's not a place in earth or heaven,
There's not a task to mankind given,
There's not a blessing or a woe,
There's not a whispered 'yes' or 'no,'
There's not a life, or death, or birth,
That has a feather's weight of worth
Without a woman in it.

(Kate Field, American journalist, 1840-1896)

To Whom It May Concern

FRANKLY, this is an open message to the mothers, wives and sweethearts of the men of North America. World War II is scarcely over, and already there is talk of another war. Accompanying this talk many business economists are predicting another depression, the granddaddy of them all.

Women of North America, are you willing to sacrifice your men in another crusade for more income and business through another war? Are you willing to accept another and more serious depression, with more unemployment, more relief, more WPA?

These two choices are all you will ever get under the Price System of trade and commerce we all exist under today. Events of the past 30 years confirm this. It has been one merry-go-round of hell from war to boom to depression to war. Now we are in an artificial boom. We're floating around in the stratosphere of a false prosperity upheld only by a gigantic cloud of debt. When the next depression comes, we'll drop farther faster and hit bottom harder than ever before.

Please think this over, Ladies, while you wait in line for food, pay holdup prices for common staples, or search

vainly for a place to live. Remember the glowing stories 'free enterprise' handed us a few years ago about that chromium-plated world we would get after 'Johnny comes marching home?' Well, Johnny is home now, but——? Now, Johnny is also paying through the nose to good old free enterprise. It's been pretty much of a letdown so far, hasn't it?

It's time the women of North America began asking themselves: 'Are women people, too?' If not, why not, and, let's do something about it!

Vote One Gang Out, The Other In

On August 26, 1920, the women of the U. S. (so they were told) were emancipated. They were given the right to vote. This political benefaction means very little when we note that women still do the same things they did before the 19th Amendment was passed.

What were they emancipated from, the Price System of trade and commerce? No, because women are driven by the same economic compulsions and fear of insecurity as men. Were they freed from servitude to some male moron who holds the family purse string? Not so most of them can notice it. Women still perform the

myriad of household tasks, bear children, raise families.

This magic emancipation consisted of transferring them from the status of non-voters to that of voters. They can now put X marks where, before, the law said that they could not. X marks the spot where not only women but men also are perpetually deluded by the status quo. Here are the words of an expert on the subject of voting:

If you put Judas Iscariot on the ballot he'd get 1000 votes in Shelby County (Memphis). (Edward H. Crump, Democratic boss of Tennessee.)

Mr. Crump knows what he's talking about. Very little choice is given you at the polls. You are privileged to approve some individuals out of the contestants. That is about all. Very few people know any candidates personally. We have no choice in selecting them and no say-so on what goes into the party platform. As soon as the election is over, the winners forget about their promises until election time rolls around again. Then it's the same old story. X has been called the mark of ignorance. However, the women of North America are not as insignificant as the politicians think.

Hands That Wear A Wedding Ring

According to *Public Service Magazine* of April, 1938, the function of homekeeping is actually, by far, the largest industry in the U. S. A. At that time it employed 32,000,000 women to operate 32,000,000 homes and spent \$30,000,000,000 annually for goods and services. Home keeping is concerned with the prime function of living and raising the coming generation. It is probably the most important single function in our whole economy. Yet, housewives are looked down upon to a great extent.

Homekeeping is not all that women do in modern society. They also help

to operate our schools. They are widely employed in distribution of goods and services. Many thousands work directly in production at skilled occupations. There are women technicians in nearly every field. There are women doctors, engineers, and scientists. In fact, women today are a part of North America's technological structure. As such, it is their duty to analyze and understand the characteristics of the social system we all live under.

Women must assert the fact that they are people too; in fact, half of all the people. Whatever undermines the General Welfare of men affects women to an even more intense degree. They are the keepers of the fire. Therefore, it is up to women to investigate the underlying operations of our social system; to uncover the physical forces, such as the march of industrial development, that determine our standards of living.

North America's problem is much greater than a question of who shall pull strings in Congress, or whether a three-mill levy is necessary for County welfare. The great need of today is for an overall, scientific plan of National social operations. We need a social setup that will banish unemployment, relief, poverty, ignorance, disease and insecurity from this land forever. It can be done. The urgency of the times dictates the installation of such a system; otherwise, we face chaos. Many women are beginning to realize this. More will do so as physical events bring greater pressure.

Land of Topsy-Turvy

For generations we have been taught to look up to the political, educational, business and clerical influence in society. Free enterprise has always told us: 'What is good for business is good for you.' The professors have always told us that only a 'sound' edu-

cation could save us. The preachers have always told us that to get a 'good' world we must first be 'good' ourselves. The politicians have played both sides of the streets, and the alleys also.

In spite of all these preachments about how to raise the General Welfare, it declines lower and lower. In the last 30 years North America has muddled from one bad mess into another. Crime, delinquency, divorce, education, public health, and the real living standards of the people become worse all the time. Uprightness and decent civilized living becomes harder to attain every year. There must be something wrong with our social system, somewhere. There certainly is. The fault lies in our overall methods of social operation.

A scientific analysis shows that the social institutions of the Price System and their operating methods are outgrowths of the underlying system of trade and commerce. This system grew up during the long ages of natural scarcity and crude handicraft culture that preceded the age of science. It is called a Price System because it is organized to carry on exchange of goods and services for a price on a basis of value determined by scarcity. This type of system works well enough when human toil and hand tools are the means of production. This is because handicraft methods can never produce enough to eliminate scarcity and thus destroy value and price. However, since the age of science began, it's a different story. The development of science has given us nearly all the worthwhile things in modern life by multiplying our ability to produce. The rub is that the Price System and its social institutions have not developed accordingly. They are still rooted in the past from whence they came.

Indeed, it is impossible for a Price

System to adapt itself adequately to science and technology. One or the other must dominate because there is an incompatible difference between them. Science presses ever forward toward abundance. The Price System pulls ever backward toward scarcity. It must have either natural or artificial scarcity to exist. This explains all the with-holding strikes by business in the last few years.

Greatest Story Ever Told

The full case of science against the Price System is too long to go into here. However, the whole record has been worked up by Technocracy Inc. It is the greatest story ever told and because it consists of facts can never be refuted. Opinions can't change facts. Technocracy Inc. has spent the last 26 years analyzing and studying the course of physical events in world history and particularly in North America today.

It has traced the development of science and technology within the framework of the Price System. It has tabulated the impact of these new physical forces upon the ancient Price System and recorded their effect. It has demonstrated that our major social problem of 'want in the midst of plenty' arises from the inability of the Price System to adapt its institutions to the needs of this day and age. It follows that if we solve this major problem nearly all our other social problems will disappear automatically.

Technocracy Inc. has had nothing to do with causing the condition that America is in now. It has merely analyzed it, and drawn up social blueprints for its solution. This is the same thing a doctor does when he analyzes an illness and prescribes a remedy. Technocracy does not blame anyone; nor does it advocate overthrowing the government. It's not

the government's fault. It's not anyone's fault, in particular. The blame lies with the Price System. That means all of us, and all of our social institutions and methods of operation. This is so because that is what composes the Price System.

Technocracy Inc. is a non-profit, non-political, non-sectarian, scientific, educational membership organization. Its purpose is to spread factual information about North America's social problems; together with the necessary remedial steps that must be taken to solve them.

Do not be awed by the statement that Technocracy Inc. is a scientific organization. This does not mean that you have to be a long-haired professor with a slide rule in order to understand Technocracy. It merely means that Technocracy seeks to apply the scientific method to social problems, to replace our present muddling business and political methods.

The scientific method is simply a study of facts and a system of procedure that goes from cause to effect in logical order. Any person with average brains can do this. No one has a monopoly on the scientific method or a patent restricting its use. Science furnishes the only method of social operations that can solve North America's problems.

A major social change is long overdue on this Continent. All the signs point that way. By social change Technocracy does not mean merely a few minor reforms to correct some of the worst abuses of the Price System. The social change that is coming will be nothing less than a complete break-up of the whole mess. It will involve a full reorganization of our entire social system along scientific lines to bring it into step with the modern march of technology.

I Withdraw My Consent

When this critical point is reached, the only alternative to such a forward step will be a relapse into social fascism. Remember what fascism did to Women of Europe? It made family slaves and brood sows out of them. That is the gospel of fascism for women. Don't take this writer's word for it. Just examine the condition of women in authoritarian, fascist countries where business, politics and clericalism rule the roost. There are plenty of such countries today. They are very backward in their scientific and technological development; but very advanced in their enslavement of women.

Technocracy Inc. is engaged in the greatest project in human history. It is one that challenges the intelligence, courage and maternal love of every woman in North America. An investigation of this project will open up a new perspective of modern life to every woman. Technocracy invites your participation. Join with the Technocrats; attend the Study Classes; participate in their many educational activities. It is imperative that North American women unite with their men and march shoulder to shoulder toward a common objective.

The reward is a new America of Abundance. It will be free from poverty, disease, ignorance, low living standards, insecurity, politics, business, clericalism and the tyranny and regimentations of the Price System of trade and commerce. Count them, one by one. Their name is legion. Among them is the ages-old inferior position of women. Up-to-date the women of North America have given silent consent to this miserable status quo. It is not necessary any more. A new America is possible and practical, right now. When that great day comes, women, for the first time in human

history, will be placed upon a plane of social, sexual, economic and intellectual equality with men. There will be equal opportunity for all people, regardless of race, creed, color or sex in all fields of social operation.

Women of North America, withdraw your consent from the ancient Price System! Turn a deaf ear to the pleadings of the dead past! Look to the future! Give your consent to the

New America of Abundance. It awaits with you an appointment. It beckons to a rendezvous with destiny, the destiny of a Continent. A higher civilization struggles to be born. You are the keeper of the fire! Make sure it blazes brightly! Make sure that it drives back the dark forces of fascism. Make sure that it lights the way to the New America of Tomorrow! *You have the most to gain. Make sure!*



A Technological Problem

The Army, in cooperation with the Forest Service fire control division, is developing a new method to fight forest fires which promises to be successful. It is a combination of plane-carried water bomb and radio proximity fuse. The water bomb idea has been tried before with but little success because no efficient way could be devised to release the water before the container hit the ground. A large water-filled container could be dropped from a plane but when it hit the ground, the water spilled out into too narrow an area to be effective. The new method was recently outlined before the House Appropriations Committee by P. A. Thompson, Chief of the Forest Service fire control division. He is quoted by the *Wall Street Journal* of February 28, 1946, as follows: "That project was not considered feasible until the development of these so-called proximity fuses. They have a radio set in them by which they can spew the water out at any predetermined elevation above the terrain." That's all there is to it. Simple, eh? Yes, but it takes technology.

"Organized fire protection really protects forest lands. That is one of the points easiest to see in the summary of the forest fire record for 1945 as issued by the U. S. Department of Agriculture. Fire protection can never be perfect and fully protect timberland. But in 1945, one-fifth of the forest land was classed as "unprotected." This 20 percent of the area accounted for 59 percent of the number of fires, 86 percent of the area burned, and suffered 72 percent of the estimated damage caused by forest fires.

"Stated the other way, the 80 percent of the forest area that is protected had only 41 percent of the fires, accounted for only 14 percent of the area burned, and for 28 percent of the estimated damages. A protected forest acre clearly has a much better chance of maturing a profitable timber crop. During the year there were 124,728 fires as compared with 131,229 in 1944, or 6,501 fewer. Despite the decrease in the number of fires the area burned over increased by more than a million acres."—U. S. Department of Agriculture, *Clip Sheet*, August 11, 1946.

'Land of the Sky Blue Waters'

Today We Are Civilized

By Harry Smith, 8342-1

Before the white man brought his ancient Price System to North America, a tribe of Indians hunted and fished in the area adjacent to the west and south shores of Lake Huron and Superior. They were the Ojibwa tribe of Algonquin Indians. Now, the Ojibwa had a legendary hero of miraculous birth, whose name was Hiawatha. He was the son of Mudjekeewis, the West Wind, and Wenonah, daughter of Nokomis, the child of the Moon. Hiawatha was sent by the West Wind to live among the Ojibwa tribe. Mudjekeewis gave him a definite assignment which, in the words of Longfellow, was to 'cleanse the earth from all that harms it, clear the fishing grounds and rivers, slay all monsters and magicians.' It is reported that the Ojibwa hunted and fished happily until the white man came with his ancient Price System.

Of course, this is a myth dreamed up by 'poor dumb Indians.' Today we know better. We are civilized. On the southern edge of the old Ojibwa territory is now located North America's greatest mass production industrial center. Where Lake Huron empties into Lake St. Clair and connects with Lake Erie, there squats that modern monster of the Price System known as the city of Detroit. Today most of the forests where Hiawatha hunted are gone. The clear streams and lakes where the Ojibwa fished are now foul with toxic substances and pathogenic bacteria, excretions of the monster who dwells on their shores. Millions of 'free-born' Americans drink and bathe in dirty, stinking disease-breeding water. Detroit is not unique in this advanced stage of Price System culture. The same story, with suitable variations can be recorded of a dozen other industrial centers.

As the American Price System becomes more rotten with decay, no doubt the 'free-born' human components thereof will enjoy ever greater cultural advantages. The day may come soon when pure water will be placed on exhibition in our museums. After all, we believe in culture, don't we? Then again, the day may come soon when the lousy Price System will go the way of all decadent systems. Then something effective can be done about North America's water problem. Science and technology have the answer.

In the meantime we can't help but wonder whether the spirit of Hiawatha still broods darkly in some remote fastness of the Great Lakes area. Maybe he is waiting for the time to go forth again and: 'Cleanse the earth from all that harms it.' But, no, that's only a myth dreamed up by 'poor dumb Indians.' Today we know better. We are civilized. Yet, somehow, that dictum of the West Wind seems to make sense.

A Glass of Colon Bacilli, Please

ABOUT one-third of the inhabitants of Michigan, over 2,000,000 people plus over 100,000 residents of Ontario, depend on the St. Clair River, Lake St. Clair and the Detroit River for drinking water. The *Detroit Free Press* to whom we are indebted for most of the data in this article says that this waterway is the 'most traversed waterway in the world.' It is

a part of the largest system of fresh water on earth, yet the people living on or near its shores are condemned to drink and bathe in filth. The list of diseases that may be contracted through the use of contaminated water is long and deadly, including the dreaded poliomyelitis.

The two sources of pollution are sewage from habitations and industrial refuse. From hundreds of ditches,

Oh! Those Terrible Kids!

Juvenile Delinquency or Price System Delinquency

By W. E. Walters, 8342-1

'There is general agreement that in the urban areas slums and sub-standard houses breed crime and delinquency. Parents do not live in them from choice. The rate of delinquency in such areas is sometimes ten times the general average throughout a city. Society is at fault for these conditions. Only society can purge itself of this fault. ... Delinquency is also caused by the frustrations and insecurities which are the result of our economic system. ... It teaches all our children that equality is the cardinal principle of our American life. Equal opportunity is open to all. A large segment of the population of any metropolitan city soon finds out that this is so only in theory. ... The frustration of the hopes and dreams of these youths leads to aggressive conduct, rebellion and hostility. It is just as much a crime to steal a person's birthright to equal opportunity as it is to steal an automobile.' (Nochem S. Winnet, Judge of the Municipal Court of Philadelphia and Secretary of the Pennsylvania Council of Juvenile Court Judges, in an article in the 'New York Times Magazine,' February 16, 1947.)

'Orphans of The Storm'

ADVANCING technology is creating new conditions by the use of more non-human energy in more automatic machinery. New conditions tend to induce new inclinations, habits and behavior patterns. Youth is more sensitive to these changes. They are the natural pioneers, flexible, impressionable and less fearful of social change. Today's social results are unsatisfactory to the young. A dynamic environment under static controls is tending to compel youth to repudiate all social regulation. Who can blame him?

In the midst of a technologically potential plenty, we try to live with a hodgepodge of instability, unemployment, insecurity, malnutrition, slum housing, artificially maintained poverty, physical and mental maladies, and juvenile delinquency. The protesting kids have ganged up on us in everything from minor mischief to cold-blooded murder. It is just one of many symptoms of the system's unworkability. Do not blame them for a normal reaction to the environment.

You cannot blame the engineer; he is only working by the day and the results of his work are not his business.

We do not like to admit it but, under this culture of conspiracy we call the Price System, the home, the school, the church, the child's welfare association or the law enforcing officers cannot provide the conditions which will enable the young people to make a success of their lives, or cause them to be very much different from what they now are. Juvenile delinquency is attracting an undue amount of attention. Most every day incidents are reported in the press. There is no point in blaming the several institutions we have depended on in the past for not doing what they are totally incapable of doing anyway without revamping the entire system of social controls.

Business, financial, labor and ecclesiastical organizations emotionalize conditions, but this helps only to feed the fires of disorderly conduct. Disorderly conduct is an outlet for social frustration. It often explodes in culpable action beyond the capacity of

any Price System organization to nullify. Every citizen shares the responsibility of helping to provide the environmental conditions and the guidance of our youth in the correct channelization of social behavior. Training to do your bit to provide an environment which is fit to grow up in is a wonderfully diverting pastime. Try it sometime.

No boy or girl is born bad. They get that way through exposure to this manure pile culture of Price. It is our collective responsibility for permitting it to exist so long. The Price System keeps most of us so busy chiseling a living with our own little two-bit rackets in our working time, and so engrossed trying to escape from the smell of it in our leisure time that we have no time, nor inclination, to indulge in collective, intelligent action ever for ourselves, let alone our children. It is just too bad, however, that we have to turn the children into scapegoats to carry the sins of the people as a whole.

I See By The Papers

The number and the seriousness of crimes committed by juveniles are increasing. Press reports tell of an expanding trend in this direction. The Federal Bureau of Investigation indicates the growing magnitude of the problem. City officials report that when they rent a civic hall to high school students they must deal with the cost of smashed plumbing, ripped out railings, damaged furniture, etc. Petty thievery is common and continuous. No parked bicycle is safe for a minute. Purse snatching, shop lifting, hold-ups with fire arms, rape, bank robbery and kidnapping, in fact the whole catalogue of crimes is charged against the kids. Twenty-one percent of all crimes are youthful crimes, and it is getting worse. A fifteen year old boy gets a twenty

year sentence for the hit and run killing of a little girl. He was fleeing in a stolen car. An adopted son kills his stepmother because she scolds him. A seventeen-year-old boy murdered a detective who was trying to arrest him for burglary. A police officer was shot by his sixteen-year-old son because he objected to his criminal companions. Two fifteen-year-old boys killed a policeman who was trying to befriend them. A thirteen-year-old girl shot her father when he surprised her in an auto camp with a fifteen-year-old boy friend. Fourteen- to seventeen-year-olds are using homemade guns, service revolvers, machine guns, and hand grenades in street fights. It is really getting serious. The background conditioning and the environment will probably produce more serious conditions. If this keeps up, the juveniles will be just as bad as their elders!

The cure for juvenile delinquency is but one of the minor details in the cure of a whole series of problems, of which this one, serious as it may be, is only peanuts. The only solution to this or any other social problem that has the slightest probability of success is the one proposed by Technocracy, a governance of function for the service of the citizen. This plan offers a collective solution to millions of problems that the people are trying to solve without the slightest probability of finding an answer, as long as they are treated as individual problems. North America as a whole really has only one problem. When the pressure becomes great enough to induce us to put our heads together under competent direction, we will find that collectively we have only one major problem. In solving that problem, there will be no unsolvable problems left.

The \$64 Question

If you are really interested in the

problem of juvenile delinquency, or, for that matter, any other collective problem, we strongly recommend that you investigate the cause for its existence. The whole series of problems would be eliminated by the installation of a functionally controlled society as advocated by Technocracy. Believe it or not, Technocracy has the answers. To understand that they are the correct answers, it is necessary to acquire a collective viewpoint which links your welfare as an individual with the welfare and fate of two

hundred million Continental citizens. Have you the capacity to overcome your anarchistic tendencies to that extent? Some people have that ability, and have acquired collective intelligence. At the moment they are the most important people on the Continent. Many more people will acquire it soon.

Join and improve. Believe it or not, you can do something about it. The Sixty-four dollar question is not "can you" but—

WILL YOU?

'From the Cradle to the Grave'

Price System Security

Two children, Sally Armstrong, 12, and Tommy 11, were picked up by police as they wandered down the main street of Richmond, Calif., begging money to bury their baby brother, Richard, 21½, who had died in a Richmond charity ward two days previously, on February 2, 1947. In making their solicitation the children presented a handwritten appeal to passersby. It said: 'My son died Sunday afternoon and we are unable to pay funeral expenses. Your help will be appreciated. Signed—Mrs. Jessie Armstrong.' 'We got \$5.10 already.' Sally told Lt. John Kinstrey at the station. The mother was called and the story found to be true. The officer said it was 'against the law to solicit funds without a city license.' The mother was advised to get a funeral on the installment plan or let the County take care of it. (*Chicago Sun*, February 5, 1947.)

In the middle of last Winter Fred Yahnke, 60, of Racine, Wisconsin found himself broke and two weeks behind in his room rent. He was evicted from his room in a Racine rooming house. 'With no place to go he wandered the streets.'

Then a 'game' leg started to bother him and he searched for a place to rest. Underneath a viaduct two blocks from the City Hall he found a large packing box half full of excelsior. 'He scoured alleys until he found a ragged blanket.'

With this equipment Yahnke proceeded to violate the majesty of the law that 'forbids rich as well as poor to sleep under bridges—.' At first, he said, 'I was pretty comfortable.' Then his leg got worse and he was unable to leave the packing box. To complicate matters the temperature dropped to eight degrees below zero; and the worst storm since 1924 swept over Wisconsin. 'The snow piled up in huge drifts outside the viaduct.'

Fred Yahnke was confined to the packing box for two weeks with nothing to eat but snow. At this point a city water department hydrant inspector discovered him. He summoned the police. The man was taken to a hospital where it was found that his feet were frozen. Physicians said that he may lose one or both legs. When notified, Yahnke said: 'I guess I can take it.' (*Chicago Sun*, February 13, 1947.)

The Power Parallel

By Lloyd Lewis

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'The predominant direction of all wars in Europe and Asia for thousands of years has been an east-west (or west-east) direction. The direction of wars has been similar to and in many cases simultaneous with (either preceding or following) the migrations of people, for the chief expansion movement of peoples has been from east to west. The expansion of population and the conflict of human warfare were channelized down through the centuries chiefly through the North Temperate Zone with few exceptions.

'The east-west direction of population growth will be forced into a north-south, south-north movement. Political states now possess in their technological economies the facilities with which to invade and develop the regions of both the Arctic and the Tropics. The physical demand of increasing resource-consumption of the technological economy of the dominant Temperate Zone political states will force a political expansion to occur in the north-south direction.' (Howard Scott, Director-in-Chief, Technocracy Inc., in 'What Shall It Profit Ye?' in *TECHNOCRACY*, Series A, No. 22, published December, 1942.)

ALTHOUGH there is yet no need for the world to be accepting the professional militarist's doctrine that Democracy must go to war with Communism and that the fighting will start in Manchuria, the agitation does bring the reminder that if the conflict does begin there, we shall have only one more instance of the strange way major dynamics have hovered around the 42nd parallel.

If you will think of Man's experiences as having happened on a globe strung around with spaced wires, you will see that the 42nd one of the upper half has usually been the live wire, the one that has carried the heaviest load of human energy.

Wires above it and below it have carried most of Man's impulses in art, poetry, architecture, music and literature, but force has, for most of the time, leased the 42nd for its own. This, except for a comparatively few centuries in which England, France, Germany, Spain and Austria met in the Lowlands for dark and bloody work, had been the power line, the high-tension wire, carrying Man's

major generations in the turbines of energy, conquest, mass migration, industrialism and adventure. The 400 years wherein Northern Europe rose and fell, from 1500 to 1945, is nothing to the scores of centuries in ancient and medieval eras when activity sparked along the 42nd parallel, and now, with Europe down, the line sings again with voltage.

Along The Power Parallel

With deviations of only a few miles it runs through Mukden, in Manchuria, on to Constantinople, through the Balkas, Rome, Barcelona, Boston, Albany, Buffalo, Detroit, Chicago, Omaha, South Pass in the Rockies and across the North Pacific to Vladivostok.

From two of the cities, Rome and Boston, have continued to come the two most dynamic of evangelistic religious movements, the Roman Catholic Church and Protestantism, both of which have outdone any non-Christian religion in spreading a gospel with fervent zeal. Christianity began to the south and Protestantism to the

Instinct for Survival

A Small Businessman Views The Price System

By Samuel Kaplan, 11236-1

In 1939 there were 3,300,000 'private' enterprises in the U. S. Over 1,500,000 of them did not employ even one person; and another 1,200,000 employed an average of only two persons each. Most of these 2,700,000 'private' enterprises had in the words of the Department of Commerce a 'below subsistence level' of less than \$1,000 a year net profit. The Department reports further: 'Of the Nation's 184,000 factories in the prewar year of 1939, the 15 percent which were largest produced 79 percent of America's industrial output.'

At the end of 1945 there were 3,234,800 'private' enterprises. Just 398,000 of them, or about 12 percent, furnished two-thirds of all the jobs in 1945; and it required the other 2,836,000 firms, or about 88 percent, to employ the other one-third wage earners. Now, the point of this is that if small business is the very essence of our economy, as the popular myth goes, then why not reap its full essence, and permit all wage earners to enjoy its blessings. It's a mere matter of liquidating the 398,000 large enterprises and tripling the 2,836,000 small ones. Total net result: 8,508,000 glorious, rugged, independent, competitive small businesses, chock full of the very essence of 'private' enterprise.

Ye Gods! What a prospect! There would be a cockroach capitalist on every corner. Nol We're against it! How could any honestly conniving 'private' enterpriser do any high-class conniving under such conditions. Why, man, with so many picayunish 'private' enterprises around, there wouldn't be any privacy left for any privateer to pursue his 'private' privilege to prostitute the General Welfare in the putrid privy of private profit. It would be an economy of Peeping Toms. No, sir, we're against it.

Private—Keep Out

If we are to discuss Private Enterprise, we must first determine what it is and what its function is in our economy. First, let us examine the designation: 'Private.' The dictionary states as follows: 'Of or concerning an individual person, company or interest; personal; not public.' That establishes the fact that privacy refers to an individual and the interests of minority groups. Where the public interest is involved, the term is at once modified. It then becomes a matter of association. What is shared is no longer private in the accepted meaning and usage of the term.

Second, let us examine the definition of 'enterprise.' Again, in the sense of private enterprise, the mean-

ing is stated as follows: 'Something undertaken, attempted; a plan, undertaking, project, scheme, etc.' Therefore, in combination, the two mean an individual or minority group undertaking or venture. Next, it is well to take up the matter of the function of private enterprise. In simple terms, it means to serve in a certain manner to produce certain results. Within our meaning, then, a private enterpriser performs a service in the expectation that he will be rewarded for his efforts. This reward, theoretically at least, is in accordance with the ability, knowledge, and work performed by the enterpriser. In practice, it is whatever the group or individual can grab out of the flow lines of industry as they pass through his 'private' spot in the channels of trade.

Having now established the general nature of private enterprise, we can, for the sake of clarity, divide it into two main divisions: Small Enterprise and Large Enterprise. Let us now examine these two. Obviously, a new set of facts arises. First, we can state that Small Enterprise does not have access to the financing that lies within the province of Large Enterprise. Therefore, Small Enterprise cannot, because of this limitation, successfully compete with Large Enterprise. Of course, there are some exceptions. This establishes the fact that Large Enterprise can and does have, actually or potentially, greater survival value than Small Enterprise.

If we now accept the preferential status of Large Enterprise within our economy, we inevitably arrive at the conclusion that Small Enterprise is being increasingly relegated to the doghouse of a minor status. This being the case, then the question arises: What, if any, future is there for Small Enterprise?

Big Hog—Small Trough

To answer this question, it is necessary only to refer to the growing power of Large Enterprise. Our economy has definite limits for expansion. The rise of Large Enterprise must and inevitably does replace Small Enterprise. This means that opportunities for the would-be Small Enterpriser become more limited as the trend proceeds. If the trend is uninterrupted, as it apparently cannot be, Small Enterprise must eventually disappear. Thus, we can see the profound and far-reaching effects of Large Enterprise upon our economy. Not only do we have ever mounting unemployment among wage and salary workers, with intensive improvement of technological processes, but we are faced as well with the elimination of Small Enter-

prise which forms the bulk of the middle class. Economists agree that the elimination of this class or group as factors in Enterprise swells the far greater group of unemployed workers. Authoritative sources state that if our economy were operated on a full-load basis with a maximum of technology, only 20,000,000 persons are needed to supply all our needs.

This establishes another important effect upon our economy. We have seen that the rise of Large Enterprise and its ever increasing power is responsible for the precarious position of Small Enterprise and possibly its eventual elimination. We have also seen that the elimination of this group from within our economy swells the ranks of the unemployed. Inasmuch as most adults within our economy need to be engaged as wage or salary workers, or as Small Enterprisers, in order to obtain purchasing power, it follows that their disassociation from gainful activities destroys their purchasing power. This, in turn, affects the operation and well-being of Large Enterprise. It cannot exist without purchasing power. No amount of reorganization or refinancing can cure such a condition, because the result is market saturation, artificial it is true, but saturation nonetheless. It is not possible to sell to those who cannot buy.

It is perhaps permissible to mention here that among the prime forces set in motion by Large Enterprise, resulting in market saturation, is the ever-accelerating volume of production resulting from an ever-increasing and more efficient technology. Our dilemma has not only one horn but several. We can safely state that Large Enterprise, in destroying Small Enterprise, at the same time and in almost exact ratio, destroys itself. Large Enterprise, in large measure, feeds upon

Small Enterprise because the latter provides purchasing power not only within itself but to a large group who depend upon it for subsistence.

From the small businessman's point of view, large scale operation creates overall social inefficiency through the destruction of small operators and the ever-increasing volume of unemployment. The impact of such large scale efficiency is disastrous to the economy as a whole. Ten Small Enterprisers, doing a small volume, are each of greater benefit to the Price System than one Large Enterprise having a much greater volume, because the efforts of the Small Enterprisers benefit a much larger area in creating purchasing power than can Large Enterprise which must, by the very nature of its operation, destroy it.

The foregoing should not be construed as an attack upon the entity known as Large Enterprise. That form of organization is not a cause of Price System phenomena but a logical result of its operating rules. It rises out of the competitive system which can function and grow in no other manner than by an ever greater encroachment upon the sphere which we are pleased to consider as belonging to Small Enterprise. Let us analyze the effect that Large Enterprise has upon our production and distribution of goods and services.

One Way Street

In order to accomplish this purpose, we must trace several factors within productive and distributive services which fuse into what we see as basic trends. In both fields the necessities of our competitive system compels the continuous search for lower cost methods of operation. These form themselves into three main avenues. First, raw materials, second, labor, and third,

distribution. It is well at this point to take into account the matter of mechanization in raw material production. The same factors apply here as at the point where raw materials are put into process of manufacture, and result from the necessity for easing the pressure from competitive low cost operations.

Labor cost has always tended to balance itself around subsistence levels. Mechanization, while increasing the output and lowering the cost per unit, does not increase the labor force but tends to decrease it. The direct result, therefore, is to bring about a decrease in purchasing power. Lower cost per unit of production at first broadens the market for goods, then actually narrows it. Obsolescence, export and government handouts to the jobless can no longer take up the surplus.

Mechanization in production, formerly limited to Large Scale Enterprise, has since the early thirties become available to small units because machinery and secondary movers have become progressively smaller. By so much has Small Enterprise set in motion an opposing force to the increasing encroachment of large scale enterprise. However, because the latter has access to an almost unlimited capital market, the former is invariably drawn into the orbit of the larger units and the basic trend again restored.

The identical factors operate within distribution. Transportation and communication are agents of distribution and can properly be grouped with it. Any mechanical, electrical and chemical improvement applied to the movement of products narrows operational motion and time. These factors tend to reduce cost per unit handled and the inevitable result is reduction in manpower needed. Thus can be seen the continually narrowing unidirectional trend from all points of

the economic compass toward destruction of purchasing power.

The question arises then: In view of the physical trends which are undoubtedly within the knowledge of Large Enterprise, why are such trends permitted to operate? The simple answer to this question is that under the unavoidable rules of the Price System, neither Small nor Large Enterprise can control the necessity for continual expansion. In this the Price System is akin to the law of energy. It is unidirectional and irreversible. After technology has arrived upon the scene, economic enterprise either continues to expand or it disintegrates. When it stops, it dies. When applied to individual units of Small or Large Enterprise, this process is in many cases barely noticeable. But, when the whole of the economy is affected, disintegration is rapid and therefore clearly perceptible. The end result is disastrous.

Consolidate The Rackets

In such case, there remains only one road for Large Enterprise to follow. That road is crystallization of all economic activities. This is expressed by the political term known as Fascism. Fascism, however, is in no better position than its predecessor, competitive enterprise. The trends that compel the Price System to adopt the fascist form of economic operation still continue unabated. The destruction of purchasing power by technology has made market saturation a chronic condition.

It is well to repeat here that neither obsolescence nor exports can remedy this condition. The most important factor in disposal of surplus, export, is limited by world competition. We can see from the phenomena that brought on the second world war that

world markets can be saturated as well as domestic markets. Goods of all descriptions cease to flow, warehouses become jammed, production ceases, wages, salaries, and profits fall off, purchasing power disappears and our Price System method of operation comes to a halt. Expansion, so necessary for economic health, must continue under fascism as before it had to continue under competitive enterprise. When expansion stops, the economy dies, whether it is a *laissez-faire* capitalism or a fascist authoritarianism.

The phenomena we have observed are not the result of evil or good intentions. Nor has optimism or pessimism any effect upon the trends. The behavior of mankind results directly from environmental conditioning. Socio-economic activities follow the pattern set by the environment. There are no solutions to the problems posed by a disintegrating economy. Not even the proposal to decentralize industry can halt the steady degeneration of our competitive system. This will not restore Small Enterprise. Decentralization under the aegis of Large Enterprise can only lead to more complete centralization.

Physical trends are unidirectional and not reversible. Their evolution can be traced as distinct patterns which always move in one direction. All trends fuse into ever greater periods of market saturation, the end product being always mass unemployment on an ever-increasing scale. The twin devils of inflation and deflation neither kill nor cure the ills inherent in our economy. Saturation and unemployment, reaching beyond the limits of tolerance, can break down not only Large Enterprise but what will be left of Small Enterprise. Government, being the creature of both, expires with them.

We are not following an historical pattern. There are no precedents to guide us. Many previous cultures have fallen but from other causes. Underneath their rise and fall, the same old Price System of trade and commerce has continued on, essentially unchanged, for ages. That was in the era B.T., or Before Technology. All past cultures were of a handicraft-agrarian nature. They were rooted in the soil and therefore the Price System could manage to survive social upheavals. Now, physical conditions are different.

We, in North America, have become dependent upon technology. The fact that our economy has reached the greatest magnitude in history does not exempt us from the iron necessity to adapt or perish; to function or cease to exist. Technology is complex, interdependent and tenuous. It is easily destroyed. The collapse of our economy can well destroy all civilization and bring about a quick reversion to barbarism. What we are faced with is no longer a genteel sort of social revolution. It is nothing less than a social mutation, a major social change.

We will have to choose between the Price System and technology. There will be no middle ground. The physical forces operating in modern society are antithetical. One or the other must prevail. If we choose to do nothing about it, we are voting for reversion to the dark ages. If the Price System is to be revalidated, it must abolish technology and go back to conditions of natural scarcity. That is the only way. For, the entire structure of price, exchange, value, trade, commerce and all their concomitant social institutions, is based on scarcity. Technology is abolishing scarcity. Ergo, technology must either be de-

stroyed to remove the menace of abundance, or set free to produce and distribute that abundance.

Mankind is highly adaptable and has survived many previous changes. Now, he is less prepared than ever before in his entire history. His divorce from the land, his concentration in cities, his dependence on technology, and his false social orientation have all tended to dull his adaptability and his instinct for survival. The rest of the world can still operate under the Price System because it has not yet attained a stage of technological development that invalidates it. The North American Continent has reached that stage—and long since. We have been muddling around and evading the issue for almost a generation. The pressure grows steadily greater. One-fifth of the earth's surface is ready for a higher form of civilization, now. Shall we be denied our birthright? Shall we lead the parade of counter-revolution back to the dark ages? Or shall we unite, operate and prosper by converting Private Enterprise into Public Enterprise?

There will be only these two choices, Mr. American; only two answers. In the name of all that is dear to you, you had better study the problem and pick the right answer. If you have any instinct for survival left, it is high time to sharpen it to a razor edge. You will be needing it badly one of these days.

Could Be Bigger

The U. S. Government is the nation's biggest holding company, controlling 36 Federal corporations with over \$16,000,000,000 of assets. (*U. S. News*, May 24, 1946)

* * *

'Happiness is the fulfillment of function.' G. T. W. Patrick, University of Iowa Professor.

Moronia Forever

Ceiling Zero

By L. W. Nicholson, R. D. 8234

'That owl up there,'
Said the man in the chair,
'Is stuffed all wrong I do declare.
See the feet—wrong size!
Wrong feathers, wrong eyes.'
And the barber kept on shaving.

* * *

And, then, when the man in the chair got through,
The owl hopped off its perch and it flew,—
And the barber kept on shaving.

(James Thomas Fields, early American poet, 1816-1881.)

Moron: 'Say, Bub, what's that pin
you are wearing?'

Technocrat: 'It's a monad, a symbol
of balance, worn by members of an
Organization called Technocracy.'

Moron: 'What's Technocracy?'

Tech: 'It's a non-profit, non-political,
non-sectarian, educational Organi-
zation.'

Moron: 'What kind of education?'

Tech: 'Technocracy Inc. disseminates
factual information concerning the
imminent collapse of the Price Sys-
tem method of—.'

Moron (interrupting): 'Well, what
are you going to do after it col-
lapses?'

Tech: 'We must install a method of
social operation which is capable
of distributing an abundance. It
will have to be done without price.'

Moron: 'You mean we can get stuff
without having to pay money
for it?'

Tech: 'Yes.'

Moron: 'Hell, it won't work because
there is too many guys who

wouldn't work if they could get
what they needed without having
to buy it.'

Tech: 'Would the ones who did work
like that?'

Moron: 'Some wouldn't work regard-
less of who wouldn't like it.'

Tech: 'Did you ever think how much
even a lazy man will work to get
out of working?'

Moron: 'Oh, yeah! I do a little of that
myself, but what's that got to do
with it?'

Tech: 'Hadn't you rather work 16
hours per week and get all the goods
and services you need than work
40 hours per week and get one-
twentieth as much?'

Moron (changing the subject to keep
from showing his ignorance):
'Who would be willing to collect
garbage under those conditions?'

Tech: 'That will be your job if you
are unable to learn to do anything
of more importance and the Engi-
neers are unable to develop ma-
chinery to do it.'

Moron: 'Aw, nuts, it won't work.'

Antidote for Chaos

How To Lose Your Weak End

By A. E. Borel, M.A.L., and the Peripattic Technocrat.

For the last generation or so an endemic psychosis has affected the collective 'mind' of America. It is a conditioned reflex produced by the decaying Price System. Let us call this National Psychosis the Price Mind of America. Our mediocre medicine men of politics, business, pulpit and little red school house piously decry this state of affairs. They 'point with alarm.' They prescribe for it moral precepts, philosophical concepts and economic gobbledy gok. All avail nothing. The disease grows worse as the Price System, of which it is a symptom, decays further. When the Price System collapses, the Price Mind will reach a crisis. It will either relapse into the complete derangement of social fascism or clear up. Here's an example of how the Price Mind operates today.

Ten Percent or Bust

The social disease of the Price Mind is a derangement of the cerebrum wherein all social values are figured in accordance with the sound they make on the cash register. A little tinkle means a little social value. A loud clang means a big social value. Little tinkles are made by such problems as education, health, housing, juvenile delinquency, child welfare, divorce, etc. There are a million more. It is considered to be all right to try to solve them if you don't get too serious about it. If you do, the Price Mind will look at you queerly and find convenient ways to avoid your company. The reason is because these social values make too little a tinkle. They don't pay off enough so the Price Mind can't afford to go far out of its way to do much about them.

Loud clangs are made by such phenomena as profits (especially fat profits), chiseling, black markets, monopoly, crime, scarcity, politics, etc. These are the real McCoy. They pay off big. Their social value is high. Any citizen who doesn't concentrate on them is considered to be either 'cracked' or unfit. The Price Mind

is an evolutionary adaptation to the Price System environment. It proves the law of the survival of the fittest. In a lousy environment only a louse can survive. Get the idea?

The Price Mind is characterized by a failure to realize that the twin forces of science and technology have altered the face of civilization in North America. It is a failure to investigate the diagnosis of the Price System made by engineers, scientists and technologists. Two outstanding examples of the Price Mind arise out of 'beliefs' in the 'rights' of individuals and minority pressure groups as opposed to the General Welfare. It is of these two examples of the Price Mind that we wish to write here because they are major in character and little understood.

Me First, Second and Third

These two 'rights' of individuals and minority groups are continually harped on by those interested. That means nearly everybody. This yammering maintains in the Price Mind the concept of self-interest as being paramount. This concept is, at the

same time, openly and hypocritically decried by all parties concerned.

No wonder John Citizen has a complex. His Price Mind is conditioned, in a distorted way, to think that neither of these 'rights' is injurious to the General Welfare but that one of them is slightly more sacrosanct than the other. We refer to the 'rights' of labor and Free Enterprise to strike.

In general, John Citizen accepts the 'right' of labor to strike as being a part of the nation's economic life. The Government sanctions and protects it. The politicians who passed the legislation brag about their 'liberal' policies. Then came the railroad strike. The distress of a Nation goaded our lawmakers into what was potentially a fascist action. The 'right' to strike is a Principle written into the law. But, be it right or wrong according to our moral concepts, makes no difference. For, to the extent that it deprives the general public of needed goods and services, it injures the General Welfare. In the case of a local strike, a local patch-up job can be done. In the case of a national strike, more drastic steps must be taken. Even the most drastic step taken against labor's 'rights' will avail nothing in itself, however. In fact, it only makes the condition worse.

You Ought To See My Brother

For there is that other 'right' to strike boring from within the social body like a cancer. It never makes the front pages of our 'free press.' It is carefully concealed when it is not approved and praised. It is a child of 'the American Way of Life.' We refer to the numerous strikes by Free Enterprise. That Free Enterprise has often struck (and how) against the General Welfare is not realized by the Price Mind of America. This is

due to false reasoning induced by propaganda.

Can you honestly discern very much difference between a union man, who has to have more money, shorter hours and better conditions before he will go back to work, and a Company which says the following that appeared in the *Humboldt Standard*, Eureka, Calif., February 9, 1946:

Due to rigid opposition from the O.P.A. to any increase in the price of butter, our association is forced to stop production of butter until such time as we can produce it without taking a loss.
—Humboldt Creamery Association.

There may be a difference in degree but very little in kind. Do they not both use the same tactics to accomplish the same purpose; namely, deprive some one of something to force the ones against whom they have a grievance to accede to their wishes so they may further their own self-interest?

Deuces and Joker Wild

In Humboldt County, Calif., during the first quarter of 1946, the Lumber and Sawmill Workers deprived the public of much needed lumber by refusing to work. This was primarily a strike against Free Enterprise for a better standard of living. The public and the workers also suffered. It is a truism under the tyranny of the Price System that living standards cannot be improved without the staging of group conflicts.

Almost at the same time, in the first part of 1946, the Humboldt Creamery Association of Humboldt County also went out on strike. They deprived the public of the use of butter, a necessary food. They, themselves, have admitted this in these words: 'This dairy product is vital

to the health of our American families.' This Free Enterprise strike was not a strike against their employees. No labor issues were involved. It was not a conflict of groups. It was a strike against the United States Government, in the form of its agency the O.P.A. This agency had been set up to apply certain rules and standards for the General Welfare. Therefore, this Free Enterprise strike was directed against the General Welfare of all the people, to further the self-interest of this minority group.

Let The Suckers Wait

All during reconversion, this Nation suffered not solely from strikes by unions but also, and maybe more so, from strikes by Free Enterprise. The refusal to produce by Free Enterprise is, in effect, striking against all the people of America. Whether the O.P.A. was 'right' or 'wrong' is beside the point. The refusal to operate under the provisions of the law is clearly criminal. To make it clear enough for the most obtuse free enterpriser to understand the definition of crime, it is 'violation of law.'

Free Enterprise (all during reconversion) has deprived Americans of the necessities of life; food, clothing, housing, etc. At the same time they have exported mountains of these necessities off this Continent. In doing this they have not been condemned by the press, pulpit, rostrum or the public. Rather, the Government and its agencies have been scorned and censored for trying, even in a feeble way, to protect the General Welfare of Americans.

Energy Is Prior to Both

The Price Mind of America can see little to question about this. These

strikes have been accepted as a legitimate expression of our so-called 'free democracy' regardless of the social results. When Labor strikes, it is a menace. When Free Enterprise strikes, it is smart business. Free Enterprise says it owns the goods produced and has a 'right' to do as it pleases with them. Well, Labor also owns its labor power, doesn't it? The fact is that Labor and Free Enterprise are both infected with the Price Mind. Each one is out to advance the interests of its own minority pressure group.

The fact that America can produce an abundance for all citizens is now evident to all. This fact invalidates every pretense of every minority group in the land for preferential advancement. In a technological society the battles of minority groups result in nothing but an intensification of the scarcity that is already being maintained artificially. If pursued far enough, these struggles can break down the whole social structure. An individual or group can, by chicanery and pressure methods, win a temporary gain. The tempo of technological advance and social unbalance, however, is accelerating so fast that there is no assurance anywhere that any gains can be retained very long. They are soon cancelled out, and a new and stronger battle must be waged to keep from going under.

Do It The 'Easy Way'

The Price Mind of labor and Free Enterprise and nearly all other Americans has not adjusted itself to these facts. Individually, we still seek a way out for ourselves and our group, by Price System methods. It cannot be done. Technology is blocking off one white alley after the other. Soon there will be none left. They'll all be dead end streets. Then what? Well, there

is a way out of this growing mess. There is a way for individuals and minority groups to achieve results for themselves far beyond their fondest dreams. It is not a Price System way. It is a far better way. In using this method, it is not necessary to stage internal group conflicts. It is not necessary to strike and go hungry. It is not necessary to hold goods off the market while you conspire to kill an agency of the Government. It is not necessary to sabotage the General Welfare.

It is necessary only to realize that all individual and minority group welfare has been reduced to a common denominator by the impact of technology. That denominator is bound up in one sentence. 'Individual problems have become collective problems.' This means that only in the advancement of the General Welfare can Americans find abundance, distribution, security and equal opportunity for themselves as individuals. Only by providing them for all can each one have them. To accomplish this, it will be necessary to reorganize our entire social and industrial system along scientific lines. The way to do this has been worked out by Technocracy. So, it will not be necessary to engage in any dangerous pioneering or experimentation.

Dream of America

During the late war against foreign fascism, under the magic of cost-plus operations, labor and Free Enterprise pulled together for the General Welfare of all. A National law conscripting men into military service was adopted. High taxes were slapped on Free Enterprise. Labor pledged itself not to strike. Everybody performed a function of some kind and American technology swamped the entire world

with war goods. At the same time, the output of civilian products on the home front broke all previous records. To be sure there was a lot of crooked work behind the scenes. Congressional investigations will be busy digging up the dirt, and trying hard not to dig too deep, for a long time. The outstanding fact remains, however, that under the stimulation of a national emergency and with a plan of only partial conscription, America came closer than ever before to achieving actual abundance for all.

Millions of individuals and many minority pressure groups came closer than ever before to solving their individual problems. Remember, it was done by a concerted, national, collective effort, wherein the General Welfare was paramount. Think, then, if we did that well under a partial conscription, partial sacrifice plan for a temporary war, how infinitely better we could do under a Total Conscription, equal service from all code, for permanent Peace with Abundance.

The war didn't last long and our bubble of abundance broke when it ended. Only the dream of what might have been remains to haunt us. Perhaps a dream of what might have been also haunts the shades of over 300,000 gallant boys who died to fend off foreign fascism. Perhaps a dream haunts the millions whose young bodies were maimed in the same cause. You may rest assured that, if such is the case, it is not the same chiseling dream as that of the Price Mind of the old America. It was a dream of a New America, qualified and capable of installing a national economy of abundance for all.

All For One and One For All

The beautiful part about this dream is that it can be translated into reality.

America has everything necessary to do the job, except the will. A new and greater national emergency will furnish that. The trend of events on this Continent is inexorable. A crisis of the greatest possible magnitude is not far off. You Price Mind quarter-wits needn't start licking your chops. America's coming crisis will not be another war. Technology has taken the profit out of that. It will be something more permanent than war. It will be the collapse of an outmoded civilization, the ancient Price System, whose dominant cultural orchid is the Price Mind which calculates social problems to the tuneful clink of the cash register.

When that great time arrives, the one paramount need of America will be for a temporary, transitional method of operations to avoid the menace of social fascism on this Continent and to provide a release from Price System futility and confusion so that we may reorganize society on a stable, enduring, scientific basis. That method of operations can be none other than a National law of Total Conscription for Peace and Security. This means Total (all out and equal) Conscription of Men (both sexes 18 to 65), Machines (technology), Materiel (resources), and Money (all finances) with National Service (equal participation) from all and Profits to None (no chiseling). It has never been done before in the history of the world and America is the only Nation on earth able to do it. It requires a high degree of technological advancement to effectuate Total Conscription, for it is a technological method of social control. America is the only area that has reached that level.

Judge Them By Their Works

Under the Price System, all nations have had partial conscription of men

and women during war time. We had it here. The plan of social fascism envisions permanent conscription of men and women for the benefit of wealth and privilege. Europe experienced almost a thousand years of this type of conscription during the Dark Ages. Read your history books. The permanent hell of permanent conscription for fascism is the only alternative to temporary Technological Conscription for Peace and Security for all. American fascists are well heeled, well organized and socially well placed in high and sanctified positions. They are the scum of the Price System that, like the scum in a dirty pot, rises to the top when the boiling point is reached. America has been at the boiling point for a long time now.

Total Conscription is something new under the Sun. It is fair to all, since all are on the same basis. In case you are confused by the word 'conscription' apply the acid test to it. Partial Conscription means special privilege to some. Total Conscription means Equal Participation from All. The first is fascistic. The second is equalitarian. Here, then, is a way out for all of us as individuals, as groups, and as a Nation. Total Conscription will be used as a temporary device. When the transitional period into the New America is completed and we have arrived there safely, Total Conscription will be scrapped. It won't be needed in the Technate. Neither will the Price System. Consequently, the Price Mind disease will resolve itself for good and all.

Win, Place and Show

Since the Price Mind is a social disease wherein the victim is obsessed with a mania for self-interest, here is the way to realize self-interest to the fullest extent. Strangely enough, it

is a way furthest removed from the calculations of the Price Mind. Still stranger, when the Price Mind takes up this solution, it will not only get the pot at the end of the rainbow which it has always been chasing, but in the process it will lose its Price Mind and acquire a brand new non-Price Mind, much easier to live with.

To those many good Americans who are infected with the Price Mind and want to be deloused, we can

recommend nothing better than the act of joining Technocracy. Here is the most non-Price Minded Body of Thought in America. Technocracy has the solution to America's social problem. Thus, it can also point out the solution of individual problems since these are a part of the whole. Don't believe this blindly. Challenge the Technocrats on this point. You'll be surprised, Brother, yes, you'll be surprised!

'I Want to Be Alone'

"All systems either of preference or of restraint being thus completely taken away, the obvious and simple system of natural liberty establishes itself of its own accord. Every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interest his own way, and to bring both his industry and capital into competition with those of any other man, or order of men.

"It is not at all necessary, or even desirable, that the self-seeking businessman should have the public welfare in mind. He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention."—Adam Smith, 1723-1790, professor of moral philosophy at Glasgow University, in his book *The Wealth of Nations*. (As quoted in *Fortune*, July, 1946).

"The poverty of the incapable, the distresses that come upon the imprudent, the starvation of the idle, and those shoulderings aside of the weak by the strong, which leave so many 'in shallows and in miseries,' are the decrees of a large, farseeing benevolence. It seems hard that an unskillfulness, which with all his efforts he cannot overcome, should entail hunger upon the artisan. It seems hard that a laborer, incapacitated by sickness from competing with his stronger fellows, should have to bear the resulting privations. It seems hard that widows and orphans should be left to struggle for life or death. Nevertheless, when regarded not separately, but in connection with the interests of universal humanity, these harsh fatalities are seen to be full of the highest beneficence. . . . Under the natural order of things society is constantly excreting its unhealthy, imbecile, slow, vacillating, faithless members . . ." Herbert Spencer, English philosopher, 1820-1903, in his book *Principles of Sociology*. (As quoted in *Fortune*, July, 1946.)

So Wags the World

Fascism (Social Reaction)

vs.

Anti-Fascism (Social Advancement) :

By Research Staff Great Lakes Technocrat

North America

United States

Last September a poll was taken in the U. S. Army stationed in Germany to uncover the soldiers' attitude towards Nazism. The poll included 1700 soldiers and officers said to represent a true cross-section of the Army. Here are some of the results.

Twelve percent of those interviewed said they believed some races were superior or inferior by nature. Another 16 percent were undecided on this point. Nineteen percent believed the Germans had some justification for starting the war. Twenty-two percent believed that Hitler had 'good reasons' for persecuting the Jews. Twenty-four percent said the Germans had 'very good' or 'fairly good' arguments in claiming that since Germany was the most efficient country in Europe she had the right to a controlling influence on the Continent. Twenty-eight percent agreed with some of the Germans' explanations as to why they went to war. Twenty-nine percent said they had grown 'more favorable' toward Germany since coming to the country. Thirty percent said they liked the Germans better than the English or French. Finally, 51 percent said they thought Hitler had done Germany a lot of good before the war.

Commenting on this evidence of lack of correct orientation in the American Army, Dr. Isador Lubin, statistician and former associate mem-

ber of the United States reparations commission, had the following to say:

I am not at all surprised at these results. They are testimony to the failure of the orientation work of our Army. Apparently our orientation specialists never did impress upon our boys just what it was they were fighting against or what it was that they were fighting for. They were not given a picture of what Nazism really was or what it stood for.

The only trouble with Dr. Lubin's analysis is that it doesn't dig deep enough. The U. S. Army's Information and Education Department is not responsible for this pro-fascist sabotage of the mental attitudes of our soldiers. The Army Orientation Course got off to a good start. It prepared and put out some excellent programs. Navy officials were so impressed that they asked for the material for the Navy.

A scientific and impartial analysis of the race question titled *Races of Mankind* was written for the Orientation Course by outstanding anthropologists. It was suppressed by order of the House Military Affairs Committee after some copies had been issued.

On March 24, 1945, the Army issued Orientation Fact Sheet #64, an 8-page leaflet, analyzing fascism. Here are a few excerpts:

... Fascism is a way to run a

country . . . it's the way Italy was run, and the way Germany and Japan are run. Fascism is the precise opposite of democracy. The people run democratic governments, but fascist governments run the people. . . . Fascism is government by the few and for the few. . . . The objective is seizure and control of the economic, political, social, and cultural life of the state. Anyone who is not a member of their inner gang has to do what he is told. They permit no civil liberties, no equality before the law. . . . They make their own rules and change them when they choose. . . . They maintain themselves in power by use of force combined with propaganda based on primitive ideas of 'blood' and 'race' by skillful manipulation of fear and hate, and by false promises of security.

Fact Sheet #64 was distributed to all U. S. service installations throughout the world. Then the pro-fascists at home got busy. Indignant speeches were made on the floor of Congress. The Chief Counsel of the House Military Affairs Committee demanded an explanation from top Army officials. The Information and Education Department of the Army was shaken down. Topnotch personnel were transferred to other duties where they could have no chance to furnish facts to the rank and file of the Armed Forces. The Orientation Course was thoroughly emasculated. After this shake-up at the top, Fact Sheet #64 did not get much emphasis any more. Is it any wonder that American soldiers did not 'know the score' when they got to Germany? Chalk up one victory for pro-fascism at home.

J. I. Yellot, director of research of the locomotive development committee sponsored by a group of railroads in conjunction with the Bituminous Coal Institute, predicted recently that the gas turbine will soon become an important factor in railroad technology.

Experiments have been successfully made with coal burning gas turbines at the Institute of Gas Technology, Chicago; Johns Hopkins University, Baltimore; and the Battelle Memorial Institute, Columbus. Coal is pulverized to the consistency of fine talcum powder. Says Mr. Yellot:

The burning of the coal under pressure is accomplished with the aid of simple equipment resembling in principle the aircraft jet propulsion compressors. The removal of the fly ash in the form of a dry powder is achieved by the use of a battery of small mechanical cyclone separators.

He said that 'the high thermal efficiency of the gas turbine will reduce the coal requirements of a typical locomotive to about 25 percent of the consumption of the standard steam locomotive.' Maintenance costs of operating a gas turbine locomotive will also be much lower than for a diesel or steam engine.

Super-alloys for use in jet engines and gas turbines were recently shown at the 27th National Metal Exposition at Cleveland. 'All told there are about a dozen outstanding new alloys that could not have been made before the war.' Some of these contain high percentages of cobalt, chromium and nickel for heat resistance.

The new super-alloys fall, roughly, into three classes, forged, wrought and

cast. The forged alloys are designed to stand temperatures up to 1300° F. The wrought alloys are for parts that operate up to 1500° F. The cast alloys are said to show promise of service up to 1900° F. Super-alloys developed in this country are far superior to those employed in Germany.

Canada

A brown caterpillar called the spruce budworm has infested one-third of Canada's forest area. The infected territory extends in a belt about 300 miles wide and a thousand miles long, reaching from the Manitoba border to the St. Maurice River in Quebec. About 250,000 square miles of forest land are involved. The worm is eating its way through Canada's forests three times faster than trees are being cut down by logging operations.

Forest experts say there is little hope of preventing the spread of the blight in two or three years into Maine and the Maritime provinces of Eastern Canada. The spruce budworm is a native of North America. It feeds on the new, green growth of balsam and spruce and on the buds at the tips of branches. In two years a tree is stripped and killed.

Forestry ranks fourth among Canadian industries. Thus, the spruce budworm blight is a direct threat to the future of Canada. C. D. Howe, reconstruction minister, calls it a 'national disaster.' The Canadian Pulp and Paper Association thinks the worm may have destroyed enough pulpwood in the last 10 years to make \$8,000,000,000 worth of paper. Paper is Canada's most important export.

Forest experts suggest that the blight was brought on by commercial logging practices of the last 150 years. These cut away the pine and spruce leaving the less commercially valu-

able balsam. Being thus favored, the balsam multiplied. Since balsam is the spruce budworm's choicest meal, the worm also multiplied. Immense damage to the physical resources of Canada is resulting because business upset the dynamic equilibrium of nature in its sacred pursuit of 'free enterprise.' Chalk up another victory for pro-fascism at home.

Approximately 60,000 additional horsepower will be added in 1946 to Canada's present 10,000,000 hp of available hydro-electric energy. In the last 13 years the amount of electrical energy generated in Canada has more than doubled. About half of this increase occurred since 1939. The manufacturing and mining industries used about three-fourths of the power generated by central stations. Electric motors do four-fifths of all the work in these industries. In the mining industry there was a 500 percent increase in electric motors operated between 1933 and 1940. Latest figures indicate that over 9 kilowatt-hours of electricity are consumed in the manufacturing and mining industry for every man-hour of labor employed. Four-fifths of Canada's potential water power is still undeveloped.

A Technical Information Service has been set up by the Canadian Government. Hundreds of scientists and technicians will be put to work solving problems for Canadian industry. Inquiries are said to be coming in at the rate of 30 a week. Some typical inquiries are:

Can oxychloride cement be used for kitchen drainboards? What's the newest process for making concrete building blocks? How do you recover iron and titanium white from titaniferrous ores?

South of The Rio Grande

Argentina

Thirteen 'top secret' Nazi documents captured in Berlin were recently released by the State Department. They were made public in Buenos Aires by John Moors Cabot, U. S. Charge d'affaires there. The papers were sent to Berlin by Erich Otto Meyhen, German embassy charge d'affaires, after the German ambassador left Argentina. They furnish proof of Nazi connections with the Peron machine.

Most of the subsidized newspapers and newspapermen in Argentina, working for Peron now, are the same ones who were formerly subsidized by Hitler's government. Among others, the documents revealed that *El Pueblo*, a Buenos Aires Catholic (Roman) newspaper, was subsidized monthly in Reichsmarks to the tune of \$990. Charge d'affaires Cabot said that *El Pueblo* was never placed on the blacklist out of courtesy to the church.

Mexico

In 1910 the population of Mexico was 12,000,000. Today it is 21,000,000. Two-thirds of the people live on the land yet 'fail by a wide margin to feed themselves and the city dwellers.' Mexico imports corn from Argentina, wheat from Canada and rice and sugar. However, the country is making strong efforts to industrialize. Progress can be reported in the establishment of irrigation projects, the building of hydroelectric plants and the elimination of illiteracy.

Over 100 irrigation projects are under construction at the present time. These will bring under cultivation about 25,000,000 acres of cropland. A hydroelectric plant nearing completion on the Atoyac River near Pueblo will furnish 20,000 horsepower. This plant, and others, are counted on to furnish power for the country's industrialization program.

By special act of the government, every person between 18 and 60 able to read and write is held responsible for teaching one illiterate how to read and write. The drive was launched in March 1945 under the slogan, 'Everyone Teach One.' Minister of Education Jaime Torres Bodet, has carried the project to every corner of Mexico.

By the end of 1945 almost 48,000 'collective centers' of teaching had been established with public funds. Another 17,000 were sponsored by private citizens. Ten million copies of a primer have been printed and distributed. A recent count showed almost 2,000,000 persons enrolled in anti-illiteracy schools. Within the first 6 months almost 300,000 passed their exams and graduated.

The 1,500,000 Indians, speaking over 20 different dialects, are a special problem. Bilingual primers in Spanish and dialect are used for them. Instruction is given all illiterates in reading, writing, spelling, arithmetic, history and natural science. Minister Bodet reported the 1945 budget allowances for education to be the highest in Mexico's history. A large number of permanent schools are also under construction.

Europe

Germany

The Potsdam agreement, signed by Britain, U. S. and Russia, provided that Nazi assets would be seized wherever found and used to help pay reparations. When the Allied Control Council was set up in Germany, it was assigned the responsibility of finding these assets. The Council agreed to quadripartite action by U. S., Britain, France, and Russia, in the search for and seizure of hidden Nazi assets. The Council felt that the participation of Russia would be desirable even though the Soviets' share of German reparations had already been decided by the Big Three at Potsdam.

There was no question involved as to how the funds would be distributed. All assets would be under the control of the Council to be distributed later to nations claiming reparations. The only point involved in the quadripartite agreement was who should be authorized to seek out the assets. To implement this decision, the Allied Control Council promulgated its law No. 5, covering this point. Nevertheless, the Soviet Union has been neatly frozen out of the search for assets in western Europe. Here's how they did it.

The U. S. State Department, in the Fall of 1945, instructed Lt. General Lucius D. Clay, Chief of the U. S. Military Government, and Russel Nixon, deputy director of the division of investigation of cartels and external assets of AMG, to seek a 'division of labor' agreement with Russia whereby the Western powers would keep out of the search for German assets in Eastern Europe in return for Russia's keeping out of the search in Western Europe. Both Clay and Nixon objected. Nixon exposed

the plan and called it a 'dirty deal.' The State Department backed down and told them to drop the subject. It had a better plan.

Early last Winter, the Paris Conference on Reparations was held to discuss the division of German assets other than those already earmarked for the Soviet Union and Poland. For this reason Russia did not participate.

Holland, Belgium, Denmark, Luxembourg, Czechoslovakia and Norway were represented. A paragraph was slipped into the agreement which gave each of the signatory nations, which included the above, the right to search for hidden Nazi assets within their own boundaries and seize them for reparations. This stipulation of the Paris Conference was contrary to law No. 5 of the Allied Control Council. Under the Council law, Russia would be included in the search. Under the Paris Act, she is excluded. General Clay told a press conference on February 26, 1946, that he had been instructed to vote for an amendment to law No. 5, bringing it in line with the Paris Act.

In the meantime, Russel A. Nixon resigned and came back to this country. He was asked to testify by the Kilgore Committee on war mobilization. Quoth Mr. Nixon:

If Russia were allowed to join in it would lay bare the Fascist or reactionary regimes in countries such as Spain, Portugal, Switzerland, Sweden and Argentina and would reveal all the elements of collaboration of certain interests in the allied countries with these regimes.

As the plot now stands, Russia has

the dominant voice with regard to Nazi assets in Bulgaria, Hungary, Romania, Finland and Eastern Austria. All other external Nazi assets, including those overseas, are being handled by Britain, France and the U. S. However, no matter who gets what, a large part, if not the most, German assets are safe under cover in Sweden, Switzerland, Spain, Portugal, Turkey and Argentina, outside the orbit of the United Nations. They planned it that way.

In Sweden there are 233 German owned firms; in Switzerland 214; in Spain 112; in Portugal 58 and 35 in Turkey, according to testimony given the Kilgore Committee by Orvis Schmidt, director of Foreign Funds Control for the Treasury Department. In 1944 the Swedish Patent Office granted 10,000 patents, the largest number in any one year in its history. Over 60 percent were on behalf of German interests. In the first half of 1945, the Swedish Patent Office was again snowed under. About 80 percent of the patents granted were to Germans. The Federal Economic Administration, now liquidated, in its final report revealed the following facts. In 1944, Germans from neutral countries met in Alsace to plan the movement of German assets abroad. As the net closed around Germany, an official of an international relief organization used his pouch to transfer moveable assets from Turkey to Switzerland. Twice a month, in 1944, a high German official flew to Stockholm to sell diamonds, stolen from the Dutch, on the Swedish black market.

The FEA says that the Allied Control Council has a legal basis in international law for acquisition of these assets since it is the successor of authority in the German State. It further says that the job is neces-

sary because German plans for a third world war are known. No wonder they liquidated the FEA in such a hurry. Can you smell the next world war cooking?

Russia

'During the war years, 10 blast furnaces, 32 open hearth furnaces, 16 electric steel furnaces, 14 ferro-alloy furnaces, 21 rolling mills and tube mills, and 13 coking batteries went into operation in the Soviet East. From 1940 to 1943, the output of coal in the Urals doubled. Its power resources, too, almost doubled during the war. Some stations increased their capacity five times and more. The Urals machine-building industry increased several hundred percent during the war. It also set up its own machine tool industry.'

The use of electric power in Soviet industry is over 9 times greater than in 1913. In 1945 rural electrification made great progress. About 600 hydroelectric plants and over 800 steam power plants were put into service in 1945. The program for 1946 envisages 1600 hydro plants and 1000 steam plants. Most of the hydro-plants were small units set up on small rivers and lakes, and designed for local use. It is estimated that small rivers in Russia have a potential capacity of 6,000,000 kilowatts.

In 1928 there were only 1,600 collective farms. Today there are 217,000. Before collectivization began there were 25,000,000 small peasant-holdings and the country was unable to supply its own needs for grain and other produce.

'Science has been of primary importance in the development of the national economy.' In February 1931, at the first Conference of Industrial Workers, Stalin put forward the slogan, "*Technology in a period of reconstruction decides everything.*" (italics ours)

So Wags the World

Fascism (Social Reaction)

vs.

Anti-Fascism (Social Advancement)

By Research Staff of Great Lakes Technocrat

North America

United States

A well organized Nazi underground movement is operating in Chicago and throughout the rest of the United States, asserted Dewey G. Hutchinson, district counsel in Chicago for the Immigration and Naturalization Service of the Department of Justice, in a recent interview. 'We have evidence,' he said, 'that many of the members of the German-American Bund throughout the country organized "singing societies," or joined existing ones, which were not more than subterfuges.'

He said that some of the Societies immediately changed their constitutions to conform to Nazi ideologies. Asked the extent of the underground movement, Hutchinson replied, 'that's hard to tell. There are many thousands of them.' He added that, 'There is no longer any doubt but that the entire movement, both in its open and secret phases, has been and is being directed from Germany. The interview was dated October 15, 1945.'

Spruille Braden, Assistant Secretary of State and former ambassador to Argentina, in an interview recently said:

The ideological and social tensions of Europe, systematically aggravated by Nazism, far from diminishing with the end of hostilities, are now appearing in our own hemisphere, deliberately transplanted here from foreign sources.

He did not elaborate.

P. C. Keith, a top chemical engineer, has developed a method for converting natural gas into gasoline. Diesel oil, alcohol and a dozen other chemical by-products. The method is called the Hydrocol process. It will make gasoline at a price low enough to compete with that obtained from petroleum.

Many years ago chemists developed the method of manufacturing illuminating gas by blasting steam over incandescent coal.

In 1923 the Tropsch-Fisher process for converting manufactured gas into gasoline was developed in Germany. In 1933 the first synthetic gasoline plant was built in Germany. This gasoline was expensive and required doctoring because it had an octane rating of only 40.

Keith visited a number of these plants in Germany before the war. It occurred to him that natural gas might be a better source for synthetic gasoline. Natural gas is composed of 90 percent methane gas combined with ethane, propane and butane. Methane gas is also generated in marshes, sewers and human intestines. When methane is burned in an atmosphere of pure oxygen, two gases result, carbon monoxide and hydrogen. These are the building blocks for synthetic gasoline.

A method was developed for extracting enormous quantities of pure oxygen from the air. In the reaction process, the carbon monoxide and hydrogen from methane combine, in

the presence of a catalyst, to make gasoline and water. Tremendous quantities of heat are generated in the process. The reaction chamber is honeycombed with water tubes. The waste heat converts the water into steam which is used to generate power to operate compressors and other equipment.

A pilot plant was built at Olean, N. Y. It performed as planned. Ten gallons of gasoline a day was produced. Then a larger demonstration plant was built which turned out 10 barrels a day. Work is now complete on drawings for a commercial plant in Louisiana in the heart of the Carthage gas field 40 miles southwest of Shreveport. The plant will produce 5,000 barrels of gasoline per day and 1,000 barrels of Diesel oil, plus 200,000 pounds of crude alcohol. The plant will use 65,000,000 cubic feet of natural gas and 40,000,000 cubic feet of oxygen a day. The gasoline is of 80 octane quality.

It is estimated that the United States has a visible supply of 100 trillion cubic feet of natural gas and an equally large reserve supply. Current consumption of natural gas is about 3 trillion feet a year. If these figures are correct, we have a visible supply of natural gas, at current consumption rates, for about 67 years.

Said chemist P. C. Keith: 'If you are not worried about costs we can make gasoline out of hay or corn-cobs, or even water lilies.' (*Ed. Note:* See how the factor of cost, i.e., the Price System, interferes with technology? In spite of the Price System, however, Technology Marches On ever adding to America's available supply of energy. A salute to the technologist who developed the Hydrocol Process.

Canada

A tremendous scandal is boiling

under the lid in Canada. It involves alleged irregularities in the sale of uranium ore from the Eldorado mines.

The Eldorado mines are on the shores of the Great Bear Lake, 1500 miles north of Seattle, and only 26 miles south of the Arctic Circle. The deposit was discovered in 1930. Until 1940 it was operated by the Eldorado Mining and Smelting Ltd. Its chief product was radium. Eldorado is one of only two known workable deposits of pitchblende, from which comes uranium and radium. The other is in the Belgian Congo. It is operated by Union Miniere du Haut Katanga. Production at Eldorado broke the Belgian world monopoly on radium.

Then a cartel agreement was negotiated between the two, under which the world's market was split on a 60-40 basis. The price of radium was stabilized at \$25,000 a gram. In 1940 the mine at Eldorado was closed down and deliberately flooded. Reasons given were an increasing body of ore and a dwindling market for radium.

In 1942 the mine was reopened under top priority for men and materials, as a part of the Manhattan Project to make atomic bombs. Early in 1944 the Canadian Government bought the property outright. It is alleged that in the intervening period the Eldorado Company diverted uranium from atom bomb uses to make greater profits by secret sales when they learned that the Government was going to take over. Several corporations and 50 persons are under investigation.

Among them is one Boris Pregel of New York, a former sales agent of Eldorado and the Belgian Radium Syndicate. He negotiated the cartel deal noted previously. Carl B. French, Secretary of Eldorado, was arrested

recently on charges that he falsified the company's books and took secret commissions.

Detailed charges have never been made public but it is said that the company diverted uranium to an unnamed 'uranium cartel.' The list of persons being investigated includes Canadian and American names. J. G. Glassco, a Toronto accountant, was appointed by an 'order-in-council' to investigate the charges. He was given wide powers and even authorized 'to use force' if necessary to get the facts.

The Ontario Hydro-Electric Power Commission will begin harnessing the Rapides des Joachims on the upper Ottawa River this spring. The project involves construction of a dam

2,500 feet long and 135 feet high. It will produce about 400,000 horsepower. The project is a part of the rural electrification program of Hydro, which is designed to raise the number of farms in Ontario within reach of electric power from the present 55 percent to 85 percent. The program includes rural distribution lines and the construction of primary and secondary stations. The main dam of the des Joachim unit will back the Ottawa River up to form a lake about 70 miles long and a mile wide. When completed, Hydro will have a total installed capacity of 3,060,000 horsepower. Up to the end of 1944, the total hydro-electric power capacity of all Canada was 10,283,213 horsepower. One-fifth of it has been installed in the last 5 years.

South Of The Rio Grande

Argentina

On November 17, 1945, Colonel Peron's afternoon newspaper *La Epoca* at Buenos Aires came out with a special announcement, which read: 'Argentine Catholics (Roman) must not Vote for the Enemies of Christ.' It stated further that the Catholic Clergy would read a special pastoral letter in every church in the country on the following day.

The pastoral letter read in all churches the next day was signed by Cardinal Louis Santiago Copello and several Archbishops. It warned that: 'No Catholic may become a member of a party or vote for candidates whose platform or principles advocate' separation of church and state, suppression of religious instruction in schools and institution of exclusively lay instruction, suppression of the oath by God and Country, and divorce.

In churches throughout Buenos Aires, women got up from their seats and left when the pastoral letter was read. In the Church of Immaculate Conception in rich Belgrano District, Father Virgilio Filippo openly exhorted his congregation to support Peron for the Presidency. About 30 well-dressed women got up and walked to one side of the church. They began to say the rosary and prayed that 'Father Filippo be saved from this period of spiritual blindness.'

He ordered two men from Catholic Action, each wearing a Peron button, to quiet the women. They refused to be still, then other men joined the first two. They pushed the women out on the sidewalk, with insulting remarks. Father Gallard, an assistant to Father Filippo, appeared at this point. One woman, Eugenia Silveyra de Oyuela, an author of many outspoken articles in the weekly *Antinazi*

told him: 'We come to Church to pray, not to listen to politics.'

Father Gallardo snapped back: 'If what bothers you in politics is a possible dictatorship, you'll have to be silent, because Jesus Christ himself was the great dictator.' Then he added: '*If you want what happened in Spain, you'll get what happened in Spain.*' (Italics ours)

Some of the congregation insisted that the protesting women be arrested. The police were called. One woman berated an officer because he seemed hesitant, 'Are you too cowardly to shoot them down?' The women were hauled to the police station. The commissar dismissed them, saying it was a matter for the Curia to handle, since it happened in a Church. Father Gallardo had gone along to the police station to press charges.

The Parish Board was contacted. They backed up Father Gallardo by saying that he had shown 'great Christian forbearance.' They voted to turn the case back to the police. Police Chief Velasco constituting himself a magistrate under Argentine law, fined three of the women 20 pesos and sentenced them to 6 days in the notorious prostitutes' home, Asilo San Miquel.

Brazil

In the last 10 years Brazil has completed one of the big engineering feats of modern times. This was draining and reclaiming the malaria ridden Baixada Fluminense swamplands that formerly almost surrounded Rio de Janeiro. The lowlands reclaimed total 2000 square miles. This area is 17 times as large as the famous Pontine Marshes near Rome, Italy, the draining of which was the only constructive thing accomplished by Mussolini's regime in 21 years.

A new airplane motor factory has been built in the reclaimed area. Orchards, truck gardens, farms, villages and towns have grown where the mosquito formerly held sway. Brazil has several other projects larger than Baixada well along toward completion.

In the northwest state of Cerea a dam and road building program is designed to overcome the dustbowl characteristics of that area. In the northeast, in the Sao Francisco Valley area Brazil is getting ready to harness Paulo Alphonso waterfalls. They are said to be a little higher and of more volume than Niagara Falls. In the far south of Brazil it is proposed to build a TVA system to provide power, irrigation and water control for a large area.

Europe

Germany

A subcommittee on war mobilization of the Senate military affairs committee has been investigating conditions in Germany. The committee's report, recently issued shows that a minimum of 75 percent of German industry either escaped any war destruction or is easily reparable. I. G.

Farbenindustrie, a giant chemical combine is 87 percent intact. Colonel Bernard Bernstein, director of the division of investigation of cartels and external assets of the A.M.G. in Germany warned the committee, 'If it is our policy to see that German industrial capacity is reduced, then we must take action now.' Bernard said that although orders signed by General of

Export and Die Anyway

By Harry Smith. 8342-1

Suckers at Home and Abroad

Under the heading 'All Is Confusion' a well known newspaper columnist, MALCOMB W. BINGAY of the DETROIT FREE PRESS starts his column of May 18 with this statement: 'My trouble is that I am not bright enough to understand things. I listen to all the experts. I go to all the noon-day luncheon clubs and town hall meetings and evening lecture courses. And I sit up all night reading the latest book advertised to make everything clear to me. But I feel like a tourist out in Los Angeles trying to follow the directions given by another fellow who doesn't know the city either.'

The columnist is not alone in his confusion; his perplexity is typical of all but a small minority of the population. One wonders how any one, who listens to politico-economic experts, can be otherwise. Such an expert is Averill Harriman, Secretary of Commerce and former ambassador to England, whose article, 'We Must Import to Live,' appears in the Saturday Evening Post of May 17, 1947. The sub-head reads: 'Having ruthlessly tapped our natural resources, we are becoming a "have-not nation." How can we meet this new and vital challenge to our future? The man charged with solving that problem reveals his program.'

Genuine Imported Stuff

Harriman during his sojourn in England saw British political and economic leaders go into a huddle and come out with the dictum: 'We've got to export to live.' He saw the English people 'accepting the most grinding sacrifices in order to achieve this objective.' Back home again, Harriman, foreseeing great trouble ahead for the United States, went into a huddle with himself, and came out with what amounts to the same play the English leaders had called, export to live. Obviously, he couldn't adopt the same slogan, so he thought up a new one: 'We've got to IMPORT to live.' Reverse English, so to speak. This thesis, developed through about three and one-half pages, comes to this conclusion: Not only have we got to import to live but export as well. In spite of clever diplomatic 'double-talk' EXPORT, not import becoming the mandatory priority. If we don't export, we can't import, so, after all, we've really got to export to live. It is quite confusing, especially if we keep in mind

the fact that exportation of our resources, raw or in the form of finished products, is the cause of our becoming a 'have-not' nation.

We are becoming a 'have-not' nation, Harriman points out, due to new and disturbing deficiencies in raw materials hitherto possessed in greatest plenty. High grade Mesabi iron ore, rich oil pools and our reserves of lead, copper, bauxite vanadium and zinc are fast becoming depleted. 'The richness of America's earth is running out.' Consider lead—we still produce more lead than any other country in the world; our 1945 output was 400,000 tons, world's highest, but it was only two-thirds of our output in the best years of our past. Our lead reserves have been depleted. We are now 'have-not' in lead to the extent of about 300,000 tons per year.

The expansion of our national income from \$64,000,000,000 in 1936 to \$165,000,000,000 in 1946, and a rise in employment from 43,000,000 in 1938 to 56,000,000 in 1946 required a lot of lead and other metals. In former years we exported lead at the

annual rate of 100,000 tons. (Nice export business, but rough on our heritage of natural resources.) Harriman doesn't tell us, and he doesn't need to tell us, that the big rise in income and employment from 1936 to 1946 was not due to import business but to war export business.

We are also short on various important alloys never plentiful in the United States: nickel, cobalt, antimony, manganese, vanadium, elements essential to modern metallurgy, the base of modern technology. It goes without saying that any such shortages must be met by imports, but, due to the small quantities used, these imports can contribute little toward saving our economy.

Holding The Bag

The article dismisses the possibility of developing marginal sources, such as shale oil and low grade iron ore, by pointing out the high cost of production and the need for holding them in reserve for future use and defense, our ace in the hole. This is the only conservation measure mentioned in the entire article. More efficient use of vital materials, or measures to prevent wastage, are not even suggested. It finally dawns on us that when Harriman shows us that we must export in great volume in order to live, he is not referring to the physical life of the people, but to the preservation of the Price System.

A stark revelation of the final tragedy of the American people, resulting from exhaustion of non-replaceable resources, is not even attempted, nor is this to be expected.

The ex-ambassador, conditioned from birth in the school of economics, seems only mildly concerned with physical realities. In common with all economic experts, he has been trained to think in terms of dollars, now largely

paper. When a nation sends dollars overseas whether loaned, leased or given away, it sends goods with them. It sends iron, aluminum, copper, lead, zinc, cotton, food, leather, forest products and similar goods. It sends abroad its raw materials, many irreplaceable. Importation of scarce raw materials, beyond the physical requirements of the people, for the purposes of trade and commerce simply accelerates the trend toward exhaustion of *all* materials, including those derived from mining the soil. The financier's omission of this significant point is readily understandable, but nonetheless confusing.

Harriman proceeds to unfurl his program with this statement:

If we simply faced the prospect of a growing deficit of raw-material resources, without anything to compensate for it, our situation would be serious indeed. Radical measures of planning, of conservation, of far reaching economic control, would be forced upon us.

Oh, no! No! No! Mr. Harriman! Planning! Conservation! Not that! As if dollars or anything could compensate for a growing deficit of raw-material resources. What does this man think people eat, wear and ride about on? Paper dollars?

Here he goes again, off into the mad realm of finance:

Fortunately, however, there is an aspect of our situation which can more than compensate for the 'have-not' trend, if we will but take advantage of it. We are already the creditor nation of the world, and we are still the primary source to which the world can look for capital to finance sorely needed projects of construction and improvement. As of the close of 1947, to be specific, United States Government and private credits and investments overseas will amount

to approximately \$19,000,000,000, not including more than \$3,500,000,000 contributions to the World Bank and Fund. Foreigners hold \$14,000,000,000 of dollar balances and United States securities and other investments, but a significant part of these holdings will be expended for American goods in the next two or three years.

Song of The Harpies

The above quotation has one meaning, only one, more exports. Goodbye to more American raw material resources:

For us, being the major—indeed, almost only large scale lending nation in the world is a new thing.

At this point, Harriman's mind wanders back to England.

It is too early to speak positively, yet I am strongly inclined to believe that what is happening to us may be compared with what happened to Great Britain in the middle period of industrial revolution.

He then reviews briefly the history of Britain's mercantile imperialism showing its foundation in Britain's coal and iron, the increasing depletion of the home supply and the nation's transition from an industrial economy, relying heavily on home resources, to an industrial economy relying on trade to provide much of the raw materials of industry. 'It was only after this transition that Britain attained her greatest wealth.' This was monetary wealth, Harriman wealth, not physical wealth.

He fails to state that it was depletion of British coal and iron through the conversion of those vital resources into pounds (sterling and paper) and the exportation of investment capital around the world that ruined the people of the British Isles. Remember how cold and hungry they were last winter?

Belatedly, he becomes a little conscious of the dreadful absurdity of his argument. He starts to hedge:

With a broad continent at our disposal, the process will hardly have such far-reaching effects on our economy, and our situation in many respects is fundamentally different. Yet, we cannot ignore the probability that we shall find ourselves caught up in this kind of general trend.

Then, calmly throwing diplomatic discretion into the waste basket, he proceeds to bull it through, ignoring the historical experience of John Bull.

'On the contrary, we must, so to speak, ride the trend confidently. Not to do so will be perilous folly.' In other words, it will be perilous folly for the United States not to follow the same economic procedures that pauperized the people of Britain.

One of these procedures is the export of capital and technical assistance for power and irrigation systems, improved transportation and other basic facilities. 'That will mean improved productivity, rising demand, and above all, the opening of hungry new markets for our industrial goods.' Export is the theme, export to live.

Who's Afraid of the Big, Bad Bear?

Finally, Harriman drops his big stink bomb, creating still more confusion. It is aimed at the Russian bug-a-boo. He refers to the 'great contest between the Soviet and western systems of life.' He fears that the spread of communism in strife-torn, economically weak countries may leave us 'politically isolated' and our 'situation will be equally grave.' We must 'behave as a wise and generous creditor.' We must bribe the leadership of sick, bankrupt, resource poor, fascist-ridden peoples around the world with generous credit, in order to block Soviet expansion. And what is at the bottom of the fear

of Soviet expansion? The fear is that such expansion will blot up some of our export markets. So his cry is for more credit, more dollars, more paper, more export, more exhaustion of resources, more war, more hell; anything to beat Russia!—and thus maintain value and price in America.

With the Russian problem solved, our Secretary of Commerce eases up a little. He tells us that this open handed policy is not to be permanent, merely a temporary expedient.

Our current lending abroad is intended to prime the pump of production. At some time in the future, a rough balance must be achieved between our exports and interest receipts on the one hand, and our imports and normal outflow of investments on the other. To strike this balance is the only healthy policy.

Pump priming again. This time it is the dried up wells of the world to be primed in an effort to stall off the inevitable collapse of the American Price System.

'As yet, we have not even roughed out a national conservation policy for the wealth of America's earth.' No, Mr. Harriman, we haven't, nor do the long, vague paragraphs which follow on how to balance exports and imports by increasing imports constitute such a policy. Constant mixing of philosophical concepts (interest receipts, securities, dollar balances, tariff, debt, credit, money, etc.) with the physical reality of raw material conversion into products, and the tonnage of those products dispersed from our shores, produces a goulash of words that not even an expert can digest. Indigestion is evident in this statement: 'While the broad trends and big principles are thus discernible, no one can tell precisely what the future will bring.' If your conclusion, Mr. Harriman, is confusion as to the future, if you, a recognized

leader, with free access to a great volume of pertinent information, are confused, what can be expected of Mr. Bingay and the rest of the reading public?

Pink Pills For Pale People

Simply stated, the problem that these national policy shapers face is this: America's technological productive mechanism, greatly improved and expanded during the past thirty years, now produces goods and services in quantities far greater than can be sold at home at a price high enough to maintain the existing financial structure. Goods, not sold, glut the market; mills and factories are forced to shut down; values decline and financial institutions collapse. The end products are depression, violence, chaos and death. The problem is what shall be done about America's value-destroying abundance. The following palliatives have been tried: Prevention of production by monopoly controls, shelving patents, shutting down of plants, etc., withholding products from the market by subsidized storage, producing inferior products (rapid obsolescence), the destruction of products by dumping, the terrific wastage of periodic wars, and foreign export. So far, all of these means combined have not been sufficient to effect the necessary scarcity. The experts are now concentrating on greater exports subsidized by Federal deficit spending.

Harriman backs this policy, although he professes to be a little worried about the depletion of American resources. His solution is curiously inane. It amounts to this: Exports are making us a 'have-not' nation, so let's increase our exports by increasing our imports. The patient is dying because of arsenic poisoning, so give him increased doses of arsenic. If you are running short of arsenic, import it.

So much for diplomatic obscurity, economic legerdemain, and political flapdaddle..

The Scientific Approach

Let us now consider another approach to America's problem, the scientific approach. Economics and politics are not sciences, they are philosophies. Facts are the building blocks of science. Opinions compose the nebulous castles of philosophy. Science is engaged with things and events in the external world; philosophy with concepts existing only in the minds of men. In philosophy, the terminology, having no referents in things and events, has different meanings for different people. There can be no complete understanding and, therefore, no complete agreement. No measurement is possible, for there is no yardstick, no unvarying unit. In the field of economics the dollar, indicative of value, may be exchanged for six pounds of bread today, three or ten loaves a year from today. Confusion is the common denominator.

Economic and political decisions evolve from desires, hopes, fears, guesses, opinions and beliefs. In science, decisions derive from facts. If sufficient factual data are not at hand, decisions must await further observation, research and experiment. The scientist must *know*. Beliefs have no place in scientific procedures. There can be no confusion. The scientific method has given us everything worthwhile that we have today, including America's unprecedented abundance, actual and potential. Suppose we apply the scientific method to the solution of America's 'have-not' problem.

State The Problem

First, a statement of the problem: To design a system for the utilization of America's resources that will effect the greatest extension of resources into

the future. Such extension to be consistent with an optimum standard of physical well being for the American people.

Analysis

1. As far as is possible, resources must be consumed by the American people.

2. There must be a minimum of wastage. Operations must be so designed as to produce the greatest possible thermodynamic efficiency. A research sequence must be an integral part of the design which must be flexible enough to accommodate the results of scientific progress, thus preventing stagnation. Optimum quality for all products, determined on the basis of energy cost of production, is also mandatory. Replaceable resources shall be substituted for non-replaceable resources whenever and wherever the best engineering practice permits.

3. The design must extend an optimum standard of living to every citizen. Fulllest expression of individual initiative must be assured so long as expression does not interfere with the welfare of others.

4. There must be no possibility of interference from non-scientific sources, such as business, politics, or ecclesiastical institutionalism.

5. The administrative organization must be such that arbitrary decisions cannot be taken by any of the directing or supervisory personnel. There can be no decisions other than those arrived at through the scientific method. Facts must be the sole arbiter.

Inventory

The next step in engineering procedure is to check materials, equipment and personnel to see if they exist in quantities sufficient to meet the above specifications. We find that the United States does not possess natural raw material resources in required quantity

and variety. Is it possible to specify an area of operations that does encompass geophysical conditions necessary for the achievement of such a program? Yes, the North American Continent. There are many reasons for specifying this area. Let us now consider some of them.

Nationalism as an ideal for social inspiration, achievement and security has been outmoded by technological advance. It must be replaced by a larger concept. Mercantile empires spread out around the world, supported by long lines of trade focused in a small controlling area, and defended by military and naval power, are passing out. British, French and Dutch mercantile empires are contracting.

A new concept of territorial operations, Contiguous Continentalism, rooted in geophysical factors, land mass, waterways, distribution of energy and material resources, population density etc., is already here.

The USSR is an example, a compact geophysical mass of the world's area, expanding around its periphery, thereby strengthening its military defense and amplifying the quantity and variety of its physical resources. Its boundaries enclose the second largest technological potential on earth. Future developments of its area technology can make this continentalism almost completely self-sufficient, its social ideology, regardless of how much you may hate it, tends toward achieving the consumption of its production by its own population within its own borders, thereby increasing the standard of living and security of its masses of people. No other large political entity possesses such an ideology.

No single political entity can combat with economic weapons the growing power of the USSR consolidation. Its expansion has been accomplished. Nor is it probable that a new United States policy of imperial mercantile

expansion, could, no matter how wide spread it becomes, compete effectively either economically or politically against the growing prestige of Russia. This is not the opinion of an 'expert.' It is the most probable conclusion arrived at through analysis of world resource and population distribution.

As to checking the spread of Russia's ideology by means of military pressure, no atomic bomb can destroy an idea, only a better idea can do that. Both the United States and Russia, in common with all other nations, operate under a Price System, buying and selling in terms of scarcity values and debt. The Price System controls, however, are quite different. In America, the control is economic. Corporate enterprise holds the reins. Political government, an instrumentality of corporate enterprise, controls people in a way favorable to business. In general, corporate enterprise dominates politics. This is the current official American ideology. In Russia, the Price System control is political, vested in one party, one man, a dictator. Politics dictates to business.

A Better Idea

In America, technological progression is making the Price System inoperable, and no form of political government, be it autocratic, bureaucratic, communistic, fascistic, republican or democratic, can save it. Communism may be sufficiently revolutionary for the scarcity economies of Europe and Asia, but in North America physical factors are dictating a more fundamental change, a change from politico-economic Price System controls over people to a functional control of resources and technology. This is the new ideology, the better idea that can transcend the Russian idea.

One other contiguous land area is ready for consolidation, that part of the western hemisphere lying between

the north pole and the equator, and between mid-Atlantic and mid-Pacific. Within these boundaries are located the lion's share of the world's known resources, a preponderance of technological equipment and a grand army of trained technologists. These factors, together with fertile land acreage, rainfall and climatic range, make possible an almost completely independent operation. Comparatively little foreign trade would be necessary.

The people of the two great political divisions of this Continent, Canada and the United States, speak the same language, have interests in common and both face the same crisis in their political and economic dilemmas. Consolidation of these areas for the mutual advantages of both peoples cannot long be postponed. The remaining political entities, Mexico, Central America and northern South American countries, must be brought into consolidation either by treaty or purchase. The peoples of these southern countries, now suffering from fascistic oppression, would benefit greatly in their standards of living by pooling their resources with northern areas.

The total area described is the minimum area for maximum defense and efficient operation. 'Technocracy contends that world peace can only be ensured and enforced by an offensive and defensive alliance of the two great contiguous continentalisms of the world—the Continent of North America and the Union of the Socialist Soviet Republics. These two continental areas dominate the world from the standpoint of geography, arable land, natural resources and technological potentialities. No world war could develop unless the material for such a war were procured from one or the other of these continental areas.'

Synthesis

Science pursues two paths, analysis

and synthesis. Technocracy, a scientific organization, proposes this social synthesis: The above designated area shall be named the North American Technate. All resources, together with all productive, service and defense mechanisms, shall be united, coordinated and operated by one technological control under designed direction. The control shall be functional, non-political, non-business, and non-sectarian.

For over 25 years, Technocracy has been preparing the design for the Technate, covering all the 'musts' for natural resource utilization and the physical requirements of the entire population as laid down previously in the above analysis. The design includes functional administration, providing for metered flow of raw materials and finished products, insuring optimum production with a minimum of human labor, and maximum free time for cultural pursuits. It will be a scientific distributive system providing continental accounting on the basis of energy conversion of all items produced and consumed, thus insuring a one to one ratio between production and consumption, a balanced load, free from booms and depressions. The design extends full, equal but not identical consuming privileges to all citizens of the Technate.

A new calendar is designed to produce a smooth continuous operation and balanced load on all services and recreational facilities. A continental hydrology system for flood and erosion control, power, irrigation, transportation and recreation, etc., is also a part of it. The Urbanate, for housing the urban population of the Technate, is the design to replace the dangerous congested plague-ridden rat-runs we call cities.

The Agrotechnology Unit will replace the outmoded farm, coordinating the production and processing of agricultural products, and providing top

living facilities for the rural population.

Space does not permit full description of the complete design, only barest outlines are given.

If you are confused by the flood of expert (?) opinions coming from public platforms, radio and press, then close your ears and open your eyes. Observe your physical environment, your land, your river systems, your underground storehouses of energy and mineral resources, and your incomparable technology mechanisms. Observe the results of the application of the scientific method. Check the measurements that have been made of the physical factors that give life, recorded in the standard units of mass, length

and time and derived units. Stop listening to Price System experts and arrive at your own conclusions. Beware of those scientists like Karl T. Compton, R. A. Millikan and Kettering when they step out of their laboratories to speculate in the dooryard of philosophy. Their statements then have no more validity than those of Moses, Vandenberg, Roger Babson, or Averill Harriman.

Technocracy has collected and correlated a vast amount of factual information. It is available to you. Analyze this data, and inspect Technocracy's design of social synthesis, the most probable for a New America of security and abundance.

Investigate and Join Technocracy!

Export America Unlimited

The U. S. Exports more than its democracy and technology. On occasion it likes to also give a helping hand to racketeers in foreign lands, for a nice Price, of course. James Wellard, *Times* Staff Correspondent, had a story in the *Chicago Times* on June 18, 1947 illustrating this helpfulness. It seems the U. S. Fleet was about to sail from Gibraltar to Naples. The big shot, wholesale, black marketeers of Naples got word of this. They chartered every available craft in Naples and sailed out to meet the fleet. It is reported that they purchased vast supplies of cigarettes and food from the Americans. Then they sailed back to Naples before the fleet and resold the supplies to retail black marketeers. Good Old Free Enterprise!

'Some authorities say the equivalent of a forty-acre farm with nine inches of top soil is swept into the Gulf of Mexico every minute. If this estimate be true, every hour of each night and day the soil of about four sections of land disappears. The fertility of an area the size of Rhode Island goes in two weeks and of North Dakota in two years. Con-

sidering the fact that there are only two acres of arable land between each human being on earth and starvation, every year the Mississippi river and its tributaries leave nearly 10,000,000 persons without their rightful share of the earthly basis for sustenance. Since nothing like that many people stop eating every year, the standard of living of the whole race goes down, down the river. These figures may be high, but even if they are divided by ten, they are still appalling.' (Thomas Alfred Tripp in an article in the *Christian Century*, July 30, 1947.)

'The fundamentally false position of the United States with respect to the United Nations can be remedied in the long run only by a sort of Rube Goldberg system of schemes whose true purpose of bypassing the United Nations is concealed in pious reassurances. No one is willing to take the blame for an open blow at the structure of that organization. Yet the way out is the one actually being taken—that of separate agreements among selected member nations.' (*Baron's Weekly*, May 5, 1947.)

So Wags the World

Fascism and Anti-Fascism

By Research Staff, Great Lakes Technocrat

North America

United States

The House judiciary committee recently released a report drawn up by Rep. Francis E. Walter (Dem. Pa.). It reveals the tie-up between German fascism and American corporations; how it was arranged before the war began in 1939; and the legal obstacle which prevents this tie-up from being unmasked in the U.S.A. The story, so far revealed, goes something like this.

On March 17, 1939, the legal staff of I. G. Farbenindustrie, German chemical trust, held a meeting to discuss ways and means to conceal the foreign assets of the trust. This was six months before the triple oligarchy of European fascism (corporate enterprise, clericalism and the political state) launched World War No. 2. Minutes of this meeting reveal that it was decided the best way to hide their foreign assets would be to set up, or turn their assets over to, sham neutral corporations. A letter dated October 5, 1939, from I. G. Farben to the German ministry of economics, reveals that the plans had been 'discussed' with Standard Oil Company. It went on to explain how the 'dummy' plan would work.

In this way patents in enemy territory which today are no longer at our disposal are placed in the hands of a large and indisputably neutral undertaking, but with which we are connected by manifold interests, so that at the end of the war . . . it makes no difference what position the United States takes . . . friendly cooperation will again result.

Thus, over two years before the U. S. and Germany went to war, Germany was getting ready for it by concealing her assets in this country, with the assistance of American corporate enterprise.

The war came off, as planned, and during it the U. S. Government seized millions of dollars worth of German assets in spite of their attempted concealment. After the invasion of Germany, Allied occupation authorities seized numerous authentic documents proving the international tie-up between foreign fascism and American pro-fascism. Among them are the documents mentioned here. The House Judiciary Committee and the Justice Department have many others in their files.

Now the war is over and the 'dummy' pro-fascist corporations who attempted to sell America down the river of world fascism by helping to conceal enemy assets are making strenuous efforts to regain possession of those assets on behalf of their foreign associates. Rep. Walter of the judiciary committee states that the Justice Department is fearful they may be successful. The reason is that the rules of evidence of Federal Courts bar the use of foreign documents as competent evidence. Apparently, witnesses must be brought in person before the court. The committee's report approved a bill at present in the congressional hopper that would change the rules so as to admit the documents in evidence. It pointed out that in

the present state of European disruption, it is practically impossible to round up witnesses.

A new and simplified process of manufacturing nitrogen fertilizer from air has been developed at the University of Wisconsin. It was worked out under the direction of Dr. Farington Daniels, professor of chemistry, from ideas conceived by Dr. Frederick G. Cottrell, a California chemical research consultant. William G. Hendrickson, research chemist in charge of the project during Dr. Farrell's absence on wartime duties, says of the process: 'The method developed at the University will be appreciably cheaper than any other known method of nitrogen fixation.' The distinctive difference in the new process is that it does not require large and elaborate plant installations. Plants will consist of small units. Since there is air everywhere, they can be spotted around the country where needed, thus eliminating long hauls and high shipping costs on the finished product.

One unit about as big around as a farm silo and less than half as high can produce 25 tons of calcium nitrate fertilizer per day. The principle of the process lies in the fact that if nitrogen and oxygen are heated to 4200° F. and then chilled instantly, 2½ percent of the resulting gases will be nitric oxide. Chilling, in this process, means reducing the temperature from 4200° F. to 500° F. almost at once. The method is a process of heating and chilling air like this to produce a steady flow of nitric oxide. This is then run through water towers to produce nitric acid and then through towers of limestone to produce calcium nitrate, the fertilizer.

A pilot plant at the University has produced two tons of 100 percent nitric acid a day. The pilot plant is

a cylindrical furnace a little larger than a home, hot air heating plant. It is filled with pebbles of a refractory material with a high melting point. The furnace is surrounded with a nine inch brick exterior with heavy insulation on the outside. An air duct and a water cooled fuel pipe (gas) go into both the top and bottom of the furnace. The two fuel pipes extend inward almost to the middle of the furnace. Here is the heating bed where the gas flames are at work.

To start the process the gas and air are turned on. The flow of air through the furnace is alternately reversed so that it comes in at the top and goes out at the bottom and then comes in the bottom to go out the top. As the air coming in the top passes down through the heating bed of pebbles, its temperature is raised. As it continues on downward through the lower strata of pebbles, more remote from the heating bed, it is chilled. Finally, this air emerges through the bottom duct and the flow is reversed. The air is now going upward across the cooler pebbles to the center heating bed. As it does so, its temperature is raised again. As it continues upward through the upper strata of pebbles, more remote from the heating bed, it is chilled again before passing out the upper duct.

Each time the flow of air is reversed its temperature is a little higher before it emerges from the furnace, and the temperature of the refractory material over which it passes also rises. This tossing of the air back and forth goes on until its temperature is jacked up to 4200° F. At this point the designated differential of 4200° F. at the heating bed in the center of the furnace and 500° F. at the upper and lower outlets is reached. This time is determined by optical pyrometers. When it is reached, the reversal of air

Grandpappy Didn't Know Best

The worship of the dead may become a dignified religion, but its merits consist only in holding the gains ancestors have made; it cannot possibly lead to new and better ways. The ancestor worshiper keeps his eyes directed toward the past; forward-looking is not one of his traits or virtues. He is conspicuously present in this land of boasted freedom and progress. The fathers of the Constitution of our government and of our social order are regarded by some of their worshipers as being beyond criticism and as having given us institutions that cannot be improved. Such a view is barbarous and the fact that it is so largely held accounts for most of our serious failures to bring our law courts and other institutions abreast of our science and invention.

J. E. Pearce, Professor of Anthropology, University of Texas, in an anthropological paper titled 'Tales That Dead Men Tell' published in the University of Texas Bulletin, October 1, 1935.

The Status Is Still Quo

The whole body of our laws as at present framed is ridiculous and obsolete. They are designed always to uphold capital at the expense of the community. I realized soon after I took office that to fight privilege under the present laws would be a jest. The cards were stacked in its favor from the start; the dice were loaded, and are loaded against the community. Capital says that today there is equal opportunity for all. In this capital lies and knows it.

The late Capt. Joseph Medill Patterson, owner of the *New York Daily News* in a letter of resignation written to Mayor Edward F. Dunne of Chicago in 1906; upon the occasion of

Mr. Patterson's resignation as commissioner of public works of Chicago. (As quoted in Kup's column in the *Chicago Times*, May 28, 1946.)

Counter-Revolutionary Program

The drive to put religious instruction of some kind into the public schools intensifies. Naturally it meets with approval from those who are fearful of the future and anxious to anchor society in its ways or turn it backward in its views that their own operations may go unimpeded.

Porter Sargent, noted educational leader, in his book 'The Continuing Battle for the Control of the Mind of Youth.' (As quoted in the *Peoples Lobby Bulletin*, May, 1946.)

Render Unto Caesar

The Roman Catholic Church insists upon being a church and a state. How can an American citizen be at once loyal to his own country and his President and also loyal to another political state and its political ruler, if the two states differ in international policy? Is it not better for a church to be a church and not try to be a church and state.

Dr. G. Bromley Oxnam, Methodist Bishop of New York, in a statement to the press. (As quoted in the *Chicago Daily News*, June 13, 1946.)

Moguls

A Hollywood producer received a story entitled, "The Optimist." He called his staff together and said: "Gentlemen, this title must be changed to something simpler. We're intelligent and know what an optimist is, but how many of those morons who'll see the picture will know he's an eye doctor?"

error of Georgia, in a campaign speech at Cartersville, Georgia, in defiance of the U. S. Supreme Court's ruling against Jim Crowism on interstate buses. (As quoted in the *New York Times*, June 9, 1946.)

Draw Your Own Confusion

We people of the South must draw the color line tighter and tighter, for the white man is the custodian of the Gospel of Jesus Christ.

United States Senator Theodore G. Bilbo (Dem. Miss.) in a campaign address for reelection. (As quoted by Milton Lehman in an article in the *Saturday Evening Post*, June 29, 1946.)

Now We Know For Sure

Of course my amendment was drawn up by the Automobile Dealers' Association. Who do you think

writes amendments around here? Congressman Fred L. Crawford (Rep. Mich.) to a group of reporters in regard to the origin of the Crawford amendment to the OPA, which sought to forbid the OPA 'to reduce established retail trade discounts or dealer handling charges.' (As quoted in the column *Inside Washington* by the Washington Bureau of the *Chicago Sun*, May 21, 1946.)

2 plus 2 equals Zero

... the mere fact that social legislation meets the social needs and responds to social demands is of itself not a strong enough reason to merit the support of a Catholic.

From a statement by the National Catholic Welfare Council, on February 28, 1946, in opposition to a bill with social medicine provisions. (As quoted by the *Converted Catholic*, June 1946.)

Voice Of Technology

But, There's The Price System

Man's productivity is no longer measured by the hours he works but by the capacity and efficiency of the machines he operates.

Robert L. Taylor, Editor, in *Chemical Industries*, May 1946.

Getting Fed Up

After 32 years in Congress I find this thing called general debate is the greatest farce in the world. Yesterday I counted two Republicans and six Democrats in their places and I'll be damned if I am going to argue against empty seats.

Representative Charles A. Eaton (Rep. N. J.) in a Congressional speech on

the loan to Britain. (As quoted by the *Chicago Sun*, July 10, 1946.)

What Goes Up, Comes Down

The average labor costs in automotive plants is 40 percent over that paid in 1941, therefore the problem is to manufacture passenger units with 40 percent less labor put in them.

William B. Stout, automobile designer, summarizing one of the conclusions reached at the Spring conference of the Society of Automotive Engineers held at French Lick, Indiana, the first week of June, 1946. (As quoted by the *New York Times*, June 9, 1946.)

Buried Patents Department

By Research Division, 8741-1

We Shall Rise Again

Examples of new technology are numerous enough almost to completely fill up this magazine every two months. Within the space allotted, we attempt to illustrate only a few that are having a current social effect. We know at least something about the new technology that is being applied. However, we know very little about that possibly greater body of technology that is locked away and kept out of use. What social effect it would have on the Price System, we can only guess. Its potentialities must be great or else the free enterprisers who bury new technology wouldn't do it. The fact that they bury a part of the General Welfare when they bury new inventions, etc., doesn't bother free enterprise. From where they sit, the General Welfare is only an abstract concept. The business of Business is to make good business out of 'giving the business' to the people. 'If they can't pay our price for meat, let 'em eat cake.'

These observations were elicited by an article by W. A. S. Douglas in his column 'On the Sun Beam' in the *Chicago Sun*, May 14, 1946. He lists a number of buried patents as follows under the heading of 'Profit Motive Puts Several Useful Inventions in Storage.'

1. *The Everlasting Match*. This match which is good for over a thousand strikes and would sell for about a dime each was invented in 1928 by Dr. Ferdinand Ringer, an Austrian chemist. Ivar Kreuger, the crooked Swedish match king, bought the patent for \$500,000 and buried it. After Kreuger's crash, the patent rights went to an American-British combine. They

buried it too. Now it is said the U. S. Department of Justice has ordered it released for use. We'll see.

2. *Perpetual Depilatory*: This is a cream which if applied to the skin regularly will prevent hair from growing. It cannot do the skin any harm. It could do plenty of harm, however, to the razor, soap, shaving cream, etc. businesses. Its adoption by men generally would save the Continent between 10,000 and 15,000 tons of steel every year. Pardon us, we forgot. A little item like that is only an abstract concept to good old 'free enterprise.'

3. *Three-Filament Bulb*: This is an electric light bulb with three filaments. Only one burns at a time. When the first filament burns out, a switch over device throws the second into use, and so on. This would give a light bulb three times the useful life it has now. That's good technology but bad business, for the two or three companies who manufacture 100 percent of all the bulbs in America.

4. *Perpetual Flashlight*: This is a flashlight that can be recharged from the house current. No batteries are needed. Well, then, if put into use, no batteries could be sold. Can you blame any honest free enterpriser for stepping on such a menace? 'What's good for business is good for the people.' Ain't it a fact? Yes, it ain't!

5. *Anti-Friction Device*: Locked away in the safe of a great manufacturing plant is a new system of lubrication that would make cylinders last longer than the lifetime of the owner. The idea is said to have come from a woman war worker, who learned a lot about lubrication on her war

job. She worked out a new method in her spare time. Her employers were in the business of making cylinders. When this menace appeared, they bought the girl's idea, gave her an executive position, and promptly buried the whole thing.

Now, if the petroleum interests would only do a little high-class snooping around, they might be able to get the gist of this woman war

worker's idea. It could be that the new method might use more of our irreplaceable oil than older methods. In that case, it would be good business for the oil busintss to crack down on the cylinder business by setting up a dummy corporation to push the new anti-friction method. Everything would have to be on a sound business basis, of course. When the chislers fall out, the suckers get a break.

Significance of Power

'When one considers the place of energy resources in world politics it at once becomes apparent that it was the nations which could command the greatest volume of energy resources which won the war. Electric energy from Bureau of Reclamation plants on the West Coast provided at least half of the energy used in building planes, ships, guns and tanks manufactured in that part of the country.

'Let me make this plainer. A primitive man working with his hands and rude tools can do as much work in a year as about 150 kilowatt hours of electric energy used through such modern appliances, as are found today in every electrified kitchen and barn. Now a kilowatt hour is the measure of electrical enrgy produced by one kilowatt of installed capacity operating for one hour.

'Present Federal plants in the Missouri River Basin have an installed capacity of 84,000 kilowatts and plants under construction will have 433,600 kilowatts capacity when completed. Plants contemplated would have 1,909,367 kilowatts capacity, bringing the projected total to approximately 2,500,000. Now if this projected capacity were to be run at only 50 percent of its possible capacity it would produce 10,950 million kilowatt hours of energy a year—energy capable of doing the work of 73 million men using primitive tools. It would be like

adding 73 million slaves who were fed from the energy of the Missouri River and its tributaries to the population of the basin.

'Let me draw one more parallel. According to careful statistical analysis the energy used per person for productive activity in the United States, when all forms of energy are reduced to the common denominator of kilowatt hours, amounted in 1937 to about 6,996 kilowatt hours. In France, where industrialization also has made much progress, energy use per capita was the equivalent of 2,811 kilowatt hours per year, while in China the energy used per capita amounted to only 164 kilowatt hours a year.

'What is true as between nations is also true as between States. It is in those which are highly industriaized, where the use of electric power has been most highly developed, that the most wealth is produced; and along with the wealth and higher income of the people go the opportunity to provide better educational and health facilities. In turn the higher health and educational standards of the industrialized states make it possible for them to advance still more rapidly.' (Address of Harvey F. McPhail, Director of Power Utilization, Bureau of Reclamation, before the South Dakota Reclamation Association at Pierre, South Dakota, on August 19, 1946.)

Diamonds Could Be Inexpensive—But!

Reprinted from *Rocks and Minerals*, July, 1946

By Dr. W. B. S. Thomas

One of the requirements of the Price System is that a state of scarcity, either natural or artificially maintained, must exist. This 'must' derives from the fact that the Price System is organized to carry on exchanges of goods and services by methods of valuation. The primary consideration involved is profit. Since exchange value is a property of scarcity, it follows that abundance eliminates value and destroys profit. Ergo, it must be avoided.

This article throws some light on how an abundance of diamonds is avoided. The same general policy is pursued in all branches of business and agriculture, in education, public health and in all matters affecting the General Welfare. The Price System of trade and commerce with its concomitant social institutions is not interested in abundance and distribution. Its business is to buy low, sell high and keep things scarce. Hew to the line, let the casualties fall where they may.

One wonders why there are so few diamonds in the world and why they are more expensive than garnets. The 'Old Retread' studied this problem in the last war. Actually there are plenty of diamonds and diamonds could be as inexpensive as garnets, were it not for various factors.

British Guiana

In British Guiana diamonds are found. (*Rocks and Minerals*, May 1946, page 218.) Note that a gold expedition uncovered the fact that diamonds existed.

Georgetown, at the mouth of the Demerara River, is a busy town, famous for Demerara Rum exportation. Just a few miles from town are jungles. Our party often killed boa constrictors and large cats on canoe expeditions from the Georgetown airport.

We flew over these jungles, looking down on a mat of trees and vines. To the south were no mines, rarely a settlement.

There are no roads inland. There are no railroads. The only way to go inland is to get up an expedition, travel by water in boats as far as possible, and then hew the path to the mountains.

So little exploration of these mountains to the south has actually been done. It is known that gold and diamonds exist. Then why not build a road or a railroad to the mountains? Why not get a development company organized? Modern machinery would quickly bring a return on the investment.

The answer is this: The sugar interests do not want anyone building railroads, do not want the timberlands developed, because the present labor economics would be disrupted. The labor for sugar, for rum, was imported from the Old World. The wage is fixed, sugar is the crop.

If a railroad were built, the labor in the sugar industry would leave for better wages, the development of mines would necessitate labor in the mines. In short, development of mineral resources in British Guiana is not encouraged because it would embarrass agricultural economics.

Brazil

Now let us turn to Brazil. There are many diamond-bearing areas in Brazil, some as yet undiscovered, for again one does not find a road lead-

ing inland. There is no railroad across the country or into the mountains. This is not because of the Amazon basin. There are only two places in the whole river where one can see across the river even from a plane at 5,000 feet! The branches and tributaries are so numerous that bridges of any material could not be built to withstand the river. The river is not one stream, it is many interlacing parallel streams. The beds of these change constantly so that a bridge this year may be over a gully next year, or inundated, due to floods.

The only way to get to Manoaas, at the junction of the Rio Negro on the Amazon is by boat or by air. The boat trip is long and tedious and has been largely discontinued. The air route is rapid but expensive.

From Manoaas, up the Rio Negro (Black) to the Rio Branco, must be by canoe. As one gets above the rubber development area, one encounters savage Indians who feel that any outsider must be killed. The Army Air Forces Mapping Service lost two men in this area. They were killed in this war by bows and arrows! Just above this area there are numerous deposits of alluvial diamonds.

On the south of Brazil, on stretches of the Rio San Francisco, are more diamond-bearing gravels. The Indians dig for them with a small shovel. Finding a gold nugget is bad luck, so the nugget is flipped into the stream!

One wonders why some American has not gotten modern machinery, modern engineers, and capital enough to go in there and make a fortune.

John Dubois, of Dubois St., Dubois, Pennsylvania, can give you the answer. Before the war he had that bright idea. He went exploring and he visited the various alluvial deposits in Brazil. Johnny speaks Portuguese

like a native. He is a pilot of no mean ability. He can return anytime he wants to return to the area using a small sea-plane. Why is not Johnny a millionaire?

When Johnny got back from Brazil he had a couple of cigar boxes full of diamonds. He went to a New York firm with his diamonds and they said, "Good day, we do not want any." He argued that even if the diamond syndicate did say South American diamonds were inferior, softer than African diamonds, he still had some white and blue-white diamonds.

The gist of what they told Johnny is this: 'We control the diamond market. You are an outsider, horning into a legitimate business—we control the buying, the cutting, the outlet to selling. Good day!' Johnny was carrying millions in diamonds, which because of the brief brush-off made the diamonds simply interesting mineral specimens. They showed Johnny the storage vaults. His eyes bulged. They could unload diamonds so fast that the market could be flooded, but they controlled the release and held the price.

Then Johnny found that the war dispersed the diamond cutters. Some of them were refugees and went to South America to escape the Nazis. Brazilians could now get diamonds cut by experts, could undersell the market. Again there was hope. But meanwhile Eastman Kodak has bought the diamonds from Johnny—for the diamonds were now just commercial diamonds and only worth a few dollars a carat.

The Brazilian government decrees that one must have a license to mine gold, silver or diamonds. Every industry has a license. They believe in 'Nationalization of the Soil.' No foreign capital can come in, put in mod-

ern machinery and with engineers develop a mine property and then take the huge earnings back to the country that made the investment. The owners must be Brazilians. If an American became a Brazilian in order to accomplish this purpose, he would find that he was a Brazilian indeed. He could not get a travel permit back to the United States and the wealth he had accumulated was also Brazilian. 'You cannot take it with you.'

Gold Coast, Africa

The mines in British West Africa, Gold Coast, are near Accra. Many rumors of five carat stones were heard

but in general none of the stones would reach a carat, were almost exclusively commercial diamond quality, being fragmented or full of carbon. However, the 'Old Retread' acquired many fine XIs of octahedrons, triangles and twins which while small fluoresced and phosphoresced. These were clear, some blue-white and a few green.

The market is British controlled. Black market and underground illicit trade flourished during the war to the benefit of the Germans.

Does this answer your question why diamonds are more expensive than garnets?

Price System Mirage

"Discussing 'Opportunities in Appetites' before the members of the National Canners Association, Secretary of Agriculture Anderson emphasized the 'direct tie-up between pocketbook and appetite' and that the 'greatest increase in consumption comes when low-level income families move up to higher income brackets.' They shift from 'a flour, beans, and potato type of diet' and begin to add more meat, eggs, fruits and vegetables. 'Only when they get a truly adequate income do they eat lots of fruits and vegetables.'

"Supposing," he continued, 'we were able to add a thousand dollars a year to the buying power of each income level . . . In terms of pre-war price levels, when you add \$1000 a year to the income of families earning under \$500, each member of that family would eat more than 50 pounds of tomatoes and citrus fruit, about 25 pounds more leafy green and yellow vegetables and 90 pounds more of other fruit and vegetables.'

'Add another \$1,000 and the mem-

bers of the family would eat still more, but the increase would be smaller—almost 40 pounds more tomatoes and citrus fruit, 10 pounds more leafy green and yellow vegetables, and 65 pounds more of other fruits and vegetables. The third thousand dollars brings a per person gain of 25 pounds of tomatoes and citrus, 8 or 9 pounds of leafy green and yellow vegetables, and about 45 pounds of other fruits and vegetables. In other words, the first thousand dollars does more than the next two thousand together in adding to fruit and vegetable consumption. To put it another way—the low-income groups in this country constitute the largest untapped market in the world for farmers and food processors.' —USDA Clip Sheet, Feb. 24, 1946. Ed. Note: This large, untapped market in the low income groups referred to by Secretary Anderson will never be tapped by Price System methods. The only possible way to deliver America's abundance to America's people is by installing the Technate of North America.

Good Morning, Mr. Smart

Goodbye Mr. Aleck

By L. W. Nicholson, R. D. 8234

"Every business man, within two years, should have an INCONSPICUOUS residence, preferably on a side street, and purchase for each male adult (of the family) a farm or piece of ground, INCONSPICUOUSLY LOCATED, where, in emergency enough food stuff can be raised to furnish food and shelter during the probable crisis threatened for the period between 1940 and 1944." (Roger Babson, eminent economist, as quoted in the "American Guardian," April 30, 1937.)

Ed. Note: Talk like the above is passing around in certain business and financial circles again today.

Not Me, I'm Not The Man

This article is addressed to you, Mr. Smart American. This time, we shall talk about you, yes, YOU, and let the masses rest for a change. They get hell enough as it is, from all sides. But you, Mr. Smart, you have been getting off too easy. So, here comes the scalpel. Let the slivers fall where they may. You are a small group, Mr. Smart, you know that this country is in a hell of a mess. You know that it is possible that many Americans may not last through it. And, what are you doing about it?

You are going to play the game safe, are you, Mr. Smart Guy? You, who have been chiseling your fellow man by buying cheap and selling dear. Got your little backwoods retreat all picked out? Got it stored up with groceries to last a year or so? Got a high fence around it? Maybe, it's even electrified, huh? Don't wait too long before moving in, Mr. Smart. You might get caught in the flood.

By all means, don't tell what you are doing or why. Don't give the masses a chance to find out about it or they might expect you to explain why. That would never do, would it?

They might think you are a traitor and hang you. Don't let them find out about your chiseling rackets. Instead, tell them a glowing story of how much you are doing for them and how much you did for the war effort. Tell them that the way you are conducting their affairs is the only possible way that it could be done. Don't tell them how you helped arm our Fascist enemies before the war; or your real reasons for insisting that we must revive foreign trade. No, never should you let it leak out that this is one of your slick deals to get rid of our abundance so you can maintain scarcity and high prices.

By all means, you must make your little racket last as long as possible. You must say nothing about the mess we are in to anyone who might interfere with its operation. Naturally, you will keep it out of the newspapers. And, of course, you can do this by refusing to use them as an advertising medium if they are unwilling to cooperate.

So you have it all in the bag, have you? Then what are you getting so nervous about? Are you afraid something will upset your plans? Quit

Technology Marches On

Kilowatt-Hours or Man-Hours

By Research Division, 8741-1

Making Machines Creates Jobs?

One of the pet 'come-backs' you always hear when the subject of technological disemployment is discussed, is the one that goes like this:

Well, maybe machines do take away jobs, *but it still takes men to make those machines* . . . Ha!

That this has been known to be a fallacy, by Technocrats, for well over a decade has still not convinced many well-meaning but fact-lacking Americans. So here are the facts, based on data found in the latest (1939) census of manufactures.

Those who offer this perennial denial of machines, any machines, causing permanent disemployment, attempt to prove it by mere 'logic,' simply because it is obvious that men are still doing work in the machine tool factories, the plants that turn out tractors, etc., ad nauseum. If pressed, they may admit that there are exceptions to their rule, but the total effect 'comes out even,' or maybe a net disemployment so small as to not upset their pet theory in the slightest.

Machine tools, being the only 'machines that make other machines' can be taken as a criterion because they are

recognized as the spawners of mechanization, sharing the basis of our Power Age with the turbines in our utility plants, which latter drive the tools. Of course, the 'come back' sometimes includes tractors, Diesel locomotives, and other job-displacing machines, but the machine tool is even the progenitor of these.

Well, *is there* a net disemployment? Do machine tools, taking the best example, cause more unemployment than they require in their own production?

The most effective and final way to answer those questions and settle this previously perplexing (to some people) poser, is to determine what is the proportion of human toil to extraneous energy in that industry as a whole. How many man-hours were worked compared with the amount of power used from coal, oil, gas, and electricity.

United States Machine Tool Industry—1939

Total employment: 36,600 wage earners.

Average hours per week per man: 43

Total man-hours: 81,640,000.

Power Consumed

Converted into British Thermal Units

Bituminous coal	3,880,220,000,000
Petroleum	1,602,600,000,000
Electric power	359,366,000,000 (purchased)
Manufactured and mixed gas	221,000,000,000
Anthracite coal	156,400,000,000
Natural gas	141,255,000,000

Total 6,360,841,000,000 BTU .

This total is the equivalent (at 3,411 BTU- 1 kw-hr) of 1,865,000-000 kilowatt-hours,

Which, in turn, is the equivalent (at standard engineering rate of 13 man-hours - 1 kw-hr) of 24,245,-000,000 man-hours of work performed by extraneous energy,

Which, in turn, is *exactly 300 times the amount of energy expended* by all the man-hours put in by all the men in our machine tool plants.

Now, have you any more posers, please?

Ed. Note: See *Man-Hours and Distribution*, pages 7 to 16.

The American Way

'S. H. Williston, vice president in charge of operations of the Cordero Mining Co. of Nevada, recently explained the differences between the American and Spanish Quicksilver operations. He pointed out that Spanish ore is high grade, about 180 pounds of quicksilver to the ore ton. United States ore is low grade, about 10 pounds to the ore ton.

'Spain uses 2200 men to operate a 200 ton a day plant—10 men or more to a ton a day. United States mines, even with low grade ore (but because of efficient operations) use only one man to three tone of ore. Spain's highest yearly wage is \$240, while the United States' average is \$2400 a year.' (*Mining Record*, January 10, 1946.) Ed. Note: See *Science v. Chaos*, page 8. -----

'The Compleat Angler'

A new fish canning machine is enlarging the hearts and pocketbooks of the Columbia River Packers Association at Astoria, Oregon. Each machine displaces about 17 men. The mechanism was invented by E. H. Carruthers of Warrenton, Oregon, a former Cornell University professor. It is called the 'Pak-C-Lector.'

Strange to relate, up to six years ago there wasn't a single tuna packing plant on the Northwest Pacific Coast. Now a score of canneries handle a tonnage approaching that of Southern California.

Just why tuna weren't caught in Northwest waters until 1936 is a mystery. The chances are they've been running there for thousands of years in the Japanese Current which flows about 100 miles off the Oregon coast. Its waters average 52 to 60 degrees Fahrenheit, which is about 10 degrees higher than the surrounding ocean.

Tuna fish run in that broad stream of warm water in great schools. Not much is known about the tuna fish except that it spawns at sea and appears off the Northwest coast about mid-summer. The Northwest tuna is a different species from that caught in the south. It is called the Albacore and is said to be the tastiest of the tuna family with exceptionally white meat. Albacore fetches double the average price of other tuna. In 1937, the first tuna-fishing season, over 1,000,000 pounds were caught. In 1944 the catch was over 33,000,000 pounds. Albacores run from 10 to 30 pounds in weight each. Packing capacity in the Northwest is now large enough to handle all the catch.

The 'Pak-C-Lector' automatically sorts and weighs the tuna slices and packs them into a can. It puts a half pound of fish in each can with mathematical precision. 'Prime asset, however, is the economy of manpower. Three machines run by six operators can pack double the quantity of tuna that can be handled by a 28-operator hand line.' (*Wall Street Journal*, January 5, 1945.) Ed. Note: See *Technocracy Study Course*, bottom half page 151, page 152 and top two-thirds of page 153.

Read All About It!

The Serveu Vendor Company of Berkeley, California has announced a weather-tight coin-vending machine for selling newspapers. The unit requires no school kids, cripples or old men in attendance. Its maker says that the device can be adjusted to handle publications of different sizes. The machine turns down tokens and magnetic slugs and can be equipped with a change maker when it vends papers that sell for less than a nickel. (*Business Week*, December 29, 1945.) Ed Note: We feel like giving up on this one but try looking at page 9 of *The Technocrat*, January 1939.

Then and Now

The Bureau of Agricultural Economics in a recent report summarized the comparison between typical family operated farms in the hard winter wheat belt as they were in the five years before World War I. and the five years before World War II. The report emphasizes that the farms studied are typical of the area but not average farms since many farmers have not modernized.

THEN

Typical Farm 1913-1918

Size—330 acres

Acres of wheat..... 180 acres
Production of wheat.....1836 bu.
Investment in work animals.....\$805
Investment in machinery.....\$472
Farms with tractors.....None

NOW

Typical Farm 1938-1942

Size—660 acres

Acres of wheat..... 330 acres
Production of wheat.....3687 bu.
Investment in work animals.....\$108
Investment in machinery.....\$1,680
Farms with tractors.....99%

'What has brought about the astounding gains in farm productivity in the last thirty years? How did farmers manage to forge ahead in wartime, turning out a third more production with at least fifteen per cent less effective labor than in pre-war years?'

Secretary of Agriculture Anderson comments on these questions of his own as follows:

'The answer encompasses thousands of items of research, invention and development of new farm skills. Under broad headings they include such things as increased mechanization, greater use of fer-

tilizer and lime, a good start in conservation-type farming, improved control of pests and disease, better feeding of livestock. *Outstanding is power.* (Italics ours.) It is estimated that in 1940 our farms had in one form or another more than 174,000,000 mechanical horsepower, including one and a half million tractors. Today farmers have about two million tractors—a gain of more than 40 per cent during the war.' (U.S.D.A. *Clip Sheet*, January 6, 1946.) Ed. Note: See *Technocracy Study Course*, bottom of page 256 and pages 257 to 260.

Shade of Lord Salisbury

Richard Groetchen, a Chicago engineer, has invented a rotary machine for cooking steaks, chops, fish and fowl. Before going into manufacture, he tried it out on the public. He bought a restaurant in Chicago and installed one of his machines in the kitchen. The machine is an enclosed unit about the height of an average man, and a yard in diameter. An endless conveyor goes around and around inside, at pre-set speeds, depending on what is being cooked. Rare, medium or well-done orders can be cooked automatically by adjusting the rate of speed of the conveyor and the intensity of the gas flames.

Each order is placed in a pre-heated metal casserole so as to sear it and retain all juices. The casseroles are put in through a window on one side and after being carried around on the conveyor come out a door on the far side ready to serve. Cooking is accomplished by two banks of specially made ceramic fire tiles upon which the gas flames play. The cooking takes place under reflected heat at 800 degrees Fahrenheit.

Gas and air are pre-mixed before being blown into the burners. Thus, there is said to be no carbon-monoxide in the cooking chamber. A one-sixth horsepower motor operates the conveyors. The Groetchen rotary cooker is a time, labor, fat, food, spoilage and waste saving device. One man can turn out 2500 short orders in 12 hours. Oh, yes, the machine cooks hamburgers, too. (*Chicago Daily News*, November 15, 1945.) Ed. Note: See *Northwest Technocrat*, Volume 9, Number 100, page 7.

Each in His Own Tongue

By Publications Division 8741-1

Voice of The Price System

Poor Little Rich Feller

A large qualification should be necessary for membership in the upper house in order to represent the principle of property. The rights of the minority must be protected, and the rich are always fewer in number than the poor.

John A. Macdonald, first Premier of Canada, at the Conferences on Confederation of British North America, held at Quebec between October 10 and 29, 1864. (As reported in the *Chicago Tribune*, November 12, 1945.)

That'll Be \$5.00 Please

It should be perfectly clear to everyone that regimentation always leads to totalitarianism, and it always begins under one guise or another with medical practice. Since when have our people become so dependent as to need security from the cradle to the grave.

Dr. Herman L. Kretschmer, former president of the American Medical Association, before the House of Delegates of the AMA at the Palmer House December 2, 1945. (As reported in the *Chicago Daily News*, December 3, 1945.)

Maybe They Started The War Too

If the OPA deliberately had devised a scheme to bring about a housing shortage it couldn't have done a better job.

Arthur W. Binns, president of the National Real Estate Foundation, before a member's meeting of the Chicago Real Estate Board, January 9, 1946. (As reported in the *Chicago Daily News*, January 10, 1946.)

Talking Jackass

The law of supply and demand is a divine God-given law. The sooner we let God's laws operate without human interference, the sooner we will have prosperity.

Congressman Dudley G. Roe (Dem. Md.) speaking in the House in opposition to a provision giving the OPA an appropriation to combat black markets and racketeering. (As reported by *Labor*, February 23, 1946.)

Maybe They're Zombies

Never in 22 years as an undertaker have I seen the like of it. People keep coming in and asking if maybe someone's died and left a nice apartment empty. It don't seem nice, exactly, but I guess people get so hard up they'll try anything.

Bill O'Hara, Chicago undertaker, in a press interview. (As reported in a story in the *Chicago Daily Times*, December 16, 1945.)

Double or Nothing

Only last night a man came in to see if any of the dead had left apartments. He offered me \$50 if I could give him a tip.

Technology Marches On

You Can't Go Back

By Research Division, 8741-1

Agriculture

Horses and Tractors

Some of the compulsion behind technology is illustrated in an article in the *Farm Journal*, August, 1946, by True D. Morse, President of Doane Agricultural Service, Inc.

He cites the case of a central Illinois farmer who kept records for five years on the comparative cost of horse vs. tractor operations. 'Cost for horses per hour was 13.38 cents. Tractor cost per hour was 47.47 cents. But the tractor *did the work of eight horses*, so the comparative cost per hour was \$1.07 for eight horses, and 47 cents for the tractor.'

Another case of a dairy farmer in Ohio is cited. 'He replaced his team of horses with a tractor, and added two cows to the herd to use the pasture and feed formerly used by the horses. Here are his figures:

Cost of keeping team of horses	\$182.49	
Cash returns from two milk cows	238.50	
Amount available to pay for tractor use each year	420.99	
Operating cost of Tractor ..	\$113.99	
Depreciation	121.22	235.21
Net Gain	\$185.78'	

Tractors break down occasionally. So do horses;; they get sick. Tractors do not have to be fed, watered, curried, harnessed, unharnessed, nor their stalls cleaned out once or more times a day. Besides, horses are more unsafe. In 1938 the Illinois Agricultural Association tabulated newspapers' reports of farm accidents in Illinois. Horses caused nearly twice as many accidents as tractors.

Pass The Spuds, Please

Idaho will use 2,000 less migratory laborers to dig potatoes this fall. Reason? The potato 'combine.' This machine digs potatoes, shakes them clean of dirt and sacks, or crates them at truck height for easy handling. 'A crew of five older men, women, or children, can do as much in a day as an able-bodied 12-man crew of hand-pickers. It reduces harvesting time 10 to 15 hours per acre. . . . Time between digging and sacking is reduced to seconds by the machine, and it does away with chances of sun scald or of frost damage to potatoes.'

The potato 'combine' was home-built by inventive farmers in nine different states during the war to help combat the labor shortage. They are being manufactured commercially now by at least five companies. (*Farm Journal*, September, 1946). *Ed. Note:* See *Technocracy Study Course Book*, bottom of page 149 to center of page 151.

Transportation

The Diesel Horse

The American Locomotive Company recently produced its 75,000th locomotive. It was a 6,000 hp. diesel-electric. This locomotive was the first produced on an assembly line by mass production methods. The company expects to turn out one a day within a few months and as soon as the shortage in steel and equipment is overcome, it expects to reach a capacity of three diesel-electrics per day. 'This marks the full-scale introduction in the locomotive industry of standardized units assembled by mass production methods as compared to the made-to-order methods use in the construction of steam locomotives.' (*Wall Street Journal*, September 11, 1946).

More With Less

Eighteen boring mills for boring out the hubs of freight car wheels formerly used in the three freight car

plants of the Pullman Standard Car Mfg. Co. have been replaced with three new automatic boring machines designed by Pullman engineers. Railway car wheel output has been boosted tenfold. The old units bored out about three wheels an hour. The new one turns out 43. 'The machine drills, finish-bores, and chamfers the hole, then slides the completed wheel out of the way while bringing in a new one. Using carbide-tipped tools, the machine feeds a rotating combination drilling and boring tool into the hub of a stationary car wheel instead of rotating a car wheel under a stationary drill.' The finished hole is perfectly concentric with the outside circumference of the wheel. After the job is set up all phases of the cycle of work are pushbutton-panel controlled. The development is said to be revolutionary. (*Business Week*, August 31, 1946). *Ed Note*: See *Make Way for Social Change*, top of page 26.

Retail Business

How About The Onions?

By the drop of a dime and the push of a button, hot dogs, hamburgers, and grilled cheese sandwiches will be electrically toasted and dispensed by an automatic canteen developed by the General Electric Co. and the Automatic Canteen Co. of America. The machine looks something like a soft drink or cigarette machine. It has a glass window in back of which is the electronic heating unit. The hot dogs, hamburgers, and cheese are sandwiched in buns which are enclosed in sanitary containers and held on individual trays. The hamburgers and hot dogs

are precooked. The selected item, after being electronically toasted, drops through a glass door into a compartment below. Much experimentation was required before the proper frequency was found which would develop uniform adequate heat in bun and meat without charring one or the other. The manufacturers advise that this development does not signify that electronic cooking equipment for the home will be available in the near future. Much more experimentation is needed. *Electronics*, March, 1946. *Ed. Note*: See *Northwest Technocrat*, Vol. 9, No. 100, page 7.

the expense always of others. The advance of technology has made it clear that the best solution for individual problems is to be found in the solution of the collective problem. After all, the individual's social problem is only a reflection of the collective problem. Indeed, it is a part of it. That is what the collective social problem is, a collection of individual problems. The individual problem is a microcosm of the whole.

A New Day Is Dawning

Naturally, the Price System press, pulpit and political rostrum does not point this out. It prefers to yap eternally about a nebulous political democracy that has about as much effect upon the General Welfare as the Grem-lins in a Walt Disney comic. There is only one Organization and one movement on this Continent that has made a scientific study of Price System operations. That Organization is Technocracy Inc. It has uncovered the facts and put them down in black and white for all men to read. Technocracy knows what technology can do. Technocracy knows that the only correct answer to social problems is to

be found in the application of scientific principles and technological methods to social controls.

It teaches this constantly by the printed and by the spoken word. Technocracy is not recognized by the Price System, for the very good reason that to recognize it is to admit its correctness. It is being recognized by an increasing number of alert, intelligent and capable citizens. Among these, surely, can be counted the general automobile and Diesel mechanic. They are responsible and important members of North America's technological civilization.

Technocracy is purely educational. Its efforts are not directed toward competing with labor unions. It is not interested in grinding axes for privileged groups. Its objective is the greatest concept to capture the minds of men since recorded history began. That is to set up a higher form of civilization in North America, devoid of Price, chiseling, charity, depression and war. The blueprint is already worked out. Here is the way to solve all of our problems. The mechanic is cordially invited to Join Technocracy and investigate its design from the inside.



'I've Been Working On The Railroad'

Two locomotive chassis of new design are under manufacture for the first two experimental gas turbine locomotives burning powdered coal. The gas turbine locomotives are designed to run 1000 miles without refueling. The gas turbine generates far greater power in the Winter, or in a cold climate, than in the Summer. Fuel costs are expected to be about one third of the present amount. It is said that operating costs of about 26c a mile can be anticipated for a coal fired gas turbine as against 56 to 60c for a

Diesel engine. The locomotives are smokeless and require no water for motive power. John I. Yellott, research director of the Locomotive Development Committee sponsored by 8 railroads and four large bituminous coal producers, in speaking before the Railroad Securities Club of Chicago recently stated: 'The gas turbine will create a new standard of performance in railroad motive power and defeat the competition of the oil-burning Diesel-electric.' (From a release of the Bituminous Coal Institute, February 7, 1947.)

Who Has The Technology?

Comparison of the Bituminous Coal Mining Industry in the United States and the United Kingdom, by the Bituminous Coal Institute, February 10, 1947

	United States	United Kingdom
Total Production	532,000,000	212,000,000
Employment	400,000	650,000
Seam Thickness (feet)	5.1	4.00
Depth of Seam (Shaft Mines) (feet)	198.7*	1,254
Underground Production per Man-Day (1945)	5.04	1.12
Percentage stripped	19.0	4.9
Reserves (including Anthracite)	3.2 trillion	209 billion
Population	141,500,000	49,000,000
Reserves Per Person (including Anthracite)	23,000 tons	4,000 tons
Life of Reserves (years)	3,500	600
Production Per Person (tons)	3.8	4.3
Number of Mines (1945)	**7,033	1,570
Percentage of Underground Production: (1945)		
Cut by Machine	90.8	72.3
Cut by Pneumatic Picks	00.0	9.2
Cut by Hand	4.0	18.5
Shot from Solid	5.2	0.0
	100.0	100.0
Power Loaded	47.3	1.3
Hand Loaded on Machines	8.8	69.4
Hand Loaded in Cars	43.9	29.3
	100.0	100.0
Hauled by animals (1944)	1.9	32.0
Hauled by Machinery (1944)	98.1	68.0
	100.0	100.0
Animals Used in Mines (1944)	6,762	24,530
Percent Wages Are of Total Costs of Production (1945)	60.2	70.8
Labor Costs per Net Ton (1945) (Dollars)	1.76	4.57
Total Costs per Net Ton (1945) (Dollars)	2.93	6.46
Total Wage Bill (Dollars)	1 billion	900 million
Average Weekly Wage (1945)	52.05	23.57
Fatality Rate per Million Tons of Underground Production (1945)	1.95	2.81

* From a sample of 580 shaft mines. Source: Accident Analysis Division of the Bureau of Mines. The deepest shaft was 839 feet, located in New Mexico.

** Producing more than 1000 net tons in 1945.

Data are for 1946 unless otherwise indicated.

I Am Technology

A Fanciful Story of Fact

by The Peripatetic Technocrat

The term Technology is used in this story with two meanings, one past and one present. The past meaning is in a general sense to include all human discovery, invention and progress in the fields of science and the industrial arts from primitive man down to now. This is the dictionary definition of Technology.

Near the end of the story the meaning shifts to the specific sense of the term as used by Technocracy in relation to the American social problem today. This is that Technology is a process of production which when once started itself then controls all further operations.

Since technological processes of production are barely 50 years old it is necessary to use both definitions in order to outline the underlying importance of Technology in social life and social change.

Whether in its earlier role of discovery, invention and progress in the pursuits of livelihood, or in its modern role as a process of production Technology is the means whereby men live, and have lived. The stage of development of Technology at any given period of history, plus or minus the degree of its application, has always determined the General Welfare of man. In the past this has always been low and it is very little higher today.

However, the present advanced stage of development of Technology constitutes a guarantee of much higher living standards for all as soon as Technology is freed from the restrictions of the Price System. As North America progresses deeper into the social dilemma of the Power Age an intelligent awareness of the vital role of Technology in social life has become a necessity without which civilized life cannot go on much longer. Here is our contribution. It is the autobiography of Technology written from within the framework of the Price System where it is still confined.

Record of the Rocks

When the creature that was to become Man was yet a running-climbing Ground Ape, still descending from his remote Arboreal Ancestry of the Mesozoic Era, I helped to make his perilous existence a little less perilous. I gave him his first Tools and Weapons. I taught him how to crack open nuts with Hand Rocks, how to pry up boulders with Stakes, in the search for insects, and how to use Sticks and Stones to add Power to his Bare Hands when striking blows.

That was in the Eocene Period, at the opening of the Cenozoic Era, many millions of years ago. Geologists have not yet found the Remains of my presence then, but the records of Paleontology indicate that I was already upon the scene before the first sub-men arrived.

I taught that low-skulled, walking sub-man, *Pithecanthropus erectus* how to chip rude Hammers, Knives and Flakers from flint, agate and quartz. That was in the Pliocene Period at the end of the Cenozoic Era, before the First Glacial Age, at least a half a million years ago. The proof of my presence then is scattered over the world embedded deep in the rocks. The mammoth, the giant beaver, the woolly rhinoceros and the sabretoothed tiger still hunted abroad. I was with Man already then, helping him to fight off his Enemies, to get more Food and to dispense occasionally with the necessity of playing Jackal to the more powerful beasts after they had finished gorging on their kill.

After this first proof of my Operations, the Scroll of the Rocks is blank.

A quarter of a million years unravelled from the tireless loom of Time. The First and Second Ice Ages intervened. The Cold crept down from the North. The Face of the Land changed. *Pithecanthropus erectus* vanished somewhere, in retreat before the Ruthless Cold. Twice the great sheets of Ice spread over a large part of the Earth. Twice they retreated. Then a Temperate Period came. It was now the Second Interglacial Age, the Pleistocene Period of the Cenozoic Era.

During this time both Man and I, Technology, staged a comeback. The Man of that period is known as *Homo Heidelbergensis*. He was a powerful Brute of gorilla-like proportions. My Implements then were much improved and bigger than those of the Pliocene. They consisted of stone Chopping Tools, Hammers, Rough Axes, Flakers and Knives. With these the Heidelberg Man waged precarious warfare against the Opposing Forces of his environment.

Again the Ice came down from the North and drove most life to Warmer Climates, where its traces have been lost. Man and I, Technology, disappeared from the Scene while infinite Time parcelled out over 3000 generations. Again a Temperate Period came, the Third Interglacial Age. Again we both came back to leave our record in the Rocks. That was a Hundred Thousand Years Ago. The Man of that time is known as *Eanthropus*, the Dawn Man. This period marked the end of the Eolith Stage of my Development.

The Implements I was making by then were a great advance over what I made before. I devised Scrapers, Throwing Stones, Borers, Knives, Darts, and improved Axes that were held in the hand. Old Father Time chipped off another Thousand Generations from his everlasting mountain.

Then the Fourth and last Glacial Age started to creep over the Land. *Eanthropus* and my works went the way of *Pithecanthropus erectus* and the Heidelberg Man. A much more intelligent Sub-Man replaced them. He is known as the Neanderthal Man. With him a higher Stage dawned in my Development.

Early Paleolithic Technology

Three times I had gotten a Start with Man and three times the Ice had driven us south. This time we stuck it out. *Homo Neanderthalensis* had potentialities. He was a squat, hairy, ugly Fellow, a mighty hunter and far smarter than any of the Sub-Men who went before. He achieved the one thing that might have saved Them. *He Discovered Fire.*

I don't remember clearly how it was contrived. It may have been that he came across a Burning Forest, struck by lightning, and stumbled on it that way. It may have been that he approached an Erupting Volcano, saw a fiery stream of Lava and poked at it with his Club. The Club would have caught afire. It may have been that he was chipping Stones too close to a pile of dry leaves. Sparks could have ignited the leaves. After the original discovery, I taught him to produce Fire at will by striking Iron Pyrites against Flint in the presence of dry leaves.

The important thing was that he had Fire. This set him apart from the Lower Life around him. It came just in time. The Fourth Glacial Age was well on its way. That was 60,000 years ago. As the weather became more severe, Neanderthaloid retreated to the Caves. Driven by instinct, the wild beasts did the same. There were cave lions, hyenas and the great cave bear. Man had to Fight for possession of a Place to lay his head. With Fire and the Cutting Edge of Stone he was

irresistible. Yes, I did help him then, with a Superior Technology to what had obtained before.

During this period of Cave Life, I began to expand my Operations. I taught Man how to use the Skins of animals so as to keep his own body warm. I taught him how to make Awls, cut Thongs and pierce holes so he could drape the Skins around him. I taught him how to dress Skins. I taught him to make Spears with which to kill reindeer, bear and mammoth. I taught him to cook his meat over the Fire. I taught him how to dry it in the Sun and save it for future use.

My Tools and Weapons of that period included several varieties of Scrapers, Borers, Hand Axes, Choppers, Awls, Planing Tools, Darts, Knives, Spearheads and the Hammer and Bone Anvil. With Neanderthaloid, the first Family Life began and the first division of Function in the Production of Goods and Services. Fire made all this possible and inevitable. It did even more. It assisted the Mental Development of Man. When he began to cook his food, this practice led to a shrinkage of the Bony Structure and Muscles previously developed to masticate raw meat, etc. This created more Room on the inside of his Skull and facilitated the Frontal Development of his Brain.

Late Paleolithic Technology

Homo Neanderthalensis prevailed for Tens of Thousands of Years. Although he was better than the Sub-Men before him, he was not quite good enough to survive. As the last Ice Age waned and the Land became Fruitful again, a new and higher type of Man appeared. He came out of the South where he had been slowly Evolving and Improving. He is known as the Cro-Magnon Man. That was about 30,000 years ago.

Cro-Magnard is said to be the first *True Man*.

I was with Him also as he grew and developed parallel with the Neanderthal Man. I, Technology, am everywhere. Wherever Men are, I exist and Expand to a greater or lesser degree. The extent of my Operations and Development depends upon the Natural Resources available, the pressure of the Physical Environment and the Receptivity among Men toward my Pressure. I exist both as an Idea and a Physical Force. I am a Real Concept in the minds of Men. The way I operate is like this.

First, a Physical Need must exist, that is, a Function must require fulfilling. Such Needs and Functions arise out of the Interacting Forces present in Man's relationship with his Physical Environment. The Need and Function having preceded the Thought, I then go into action as an Idea to Fulfill the Function. I invent Tools and devise Processes. In turn these Tools and Processes react upon both Man and his Physical Environment, bringing Adaptations in both.

Being a Functional Idea, I, Technology, could not devise a Tool or Process beyond Man's Mental Ability to understand or his Physical Strength to use. It wouldn't Work because he couldn't work it. It would be no good to him. It wouldn't Fulfill the required Function.

This proves that I, Technology, am not a thing apart from Man, an Abstract or Occult Concept above his Physical Horizon. Instead I am an integral Part of him and his Environment. I am a Real and constantly changing Idea and Physical Force. I am the First Effect and also the End Product of Man's Physical Needs. And Man, physically, mentally and culturally is the End Product of my Tools.

So it was that I reached a Higher Stage of Development with the Cro-Magnon Race than I had with Neanderthal Man. We came North and drove our own kind out of the land. Cro-Magnard exterminated Neanderthaloid, Man, Woman and Child. He did not intermingle with him. I, Technology, drove out the crude Tools of the Early Paleolithic and replaced them with the Finer Implements of the Late Paleolithic.

For hundreds of centuries, I, Technology, and Cro-Magnard had been acquiring Skill of Hand and Power of Brain. We had developed Tools and Weapons that Neanderthaloid did not have, such as, Chisels, Gravers, Etching Tools, Drills, Bone Blades, Javelin Points, Spear Points, Daggers, Eyed Needles, Smoothers, Wedges, Fish Hooks, Harpoons, Pins and Shut-tles. The early Family Life of Neanderthal had been carried forward to Tribal Life and Organization.

We together brought Art into the world for the first time. Deep in the gloom of fireless Caves, safe from prowling beasts, I whiled away countless hours Painting on the walls. I devised Soapstone Lamps in which Fat was burned for illumination. I had Pigments of black, brown, red, yellow and white. I Painted the bison, horse, ibex, cave bear and mammoth. My paintings were organic, objective, functional and integral with the Life and Time of Cro-Magnard. They still retain their Colors to this day. I also Carved the heads of women in ivory and soapstone in the form of Statuettes. Yes, with Cro-Magnard, I, Technology, made a great Step forward but a greater Development was just ahead.

Neolithic Technology

About 12,000 years ago the first Neolithic Men appeared from somewhere in the Southeast. I had been

with them also for Generations too long to count. With Neolithic Man I, Technology, developed Human Culture to its highest point up to then. With him I achieved *Polished Stone Implements*. I had an Excellent Stone Axe which was Perforated so as to be attached to a Handle.

I had learned the Function of Seeds and the use of Plants. I had Domesticated dogs, cattle, sheep, goats and pigs. I had learned to Weave Baskets to carry things. I made Pottery to cook in and to use for storage jars. I Cultivated wheat, barley and millet. I Ground coarse Flour and Baked Bread. I Wove cloth out of flax and wool. I made Sharp Needles of bone with which to sew. I also made nets to catch birds and fish.

We had no trouble conquering the Cro-Magnon Man who occupied the Land, for I, Technology, had developed the Bow and Arrow. It could kill at a distance. As Cro-Magnard had driven out Neanderthaloid, Neolithic Man now conquered Cro-Magnard. A Superior Technology will always prevail. However, it was not a war of Extermination. The two races intermingled. Many traces of Cro-Magnon Man can be found today among Modern Man.

Neolithic Man had deserted the caves. He lived in rude Huts and in Dwellings built on timber piles over the surface of lakes. He was the world's first Herder and Agriculturist. I, Technology, improved my Stone Tools and Weapons almost to the ultimate. Many of my Polished Stone Implements *look* like Modern Tools. Toward the end of the Neolithic period I learned how to use Metal. Gold was the first Metal I worked. Man used it, along with Jet and Amber, as an ornament. That's about all it ever was good for. I could never do much with the Stuff.

Bronze, however, had useful Qualities. At first I cast it in Moulds made to the shape of my best Stone Implementments. That was about 7,000 years ago. Later I improved my earlier Designs. Neolithic Man and I stayed at the Bronze Stage of Development for 4,000 years. It was not until 3,000 years ago that I succeeded in Developing the use of Iron. That was well within the Historical Period of Man. Interferences to my Expansion had begun to appear.

With Late Neolithic Man I, Technology, had developed the first Writing. Then began the period of Recorded History. This recording has been largely the Chronicle of kings, priests, warriors, philosophers and politicians. These Chroniclers have not been kind to Me, Technology. They have emphasized Superficial Ideas and Events. They have Glorified the Top Dogs in Human Society. They have Twisted and Perverted the true Role of Technology in Social Life. All down through Written History, these Chroniclers have Practiced Obscurantism in favor of the Status Quo. The Real Record, however, is there. It lies buried far down in Geologic Strata, deep in the caves and scattered in the rubbish of Kitchen Middens all over the Western World.

I, Technology, was with Man when he was still sub-human, a hairy Savage eking out a precarious and perilous Existence. I accompanied him down through the Thousands of Centuries that elapsed before he developed into the Thing he is today. I was the Physical Force underlying his Existence, determining his General Welfare. I was the Means Whereby he Lived. I was with him when he Combined his Strength with that of other Men in Social Groups so as to Multiply it against the Opposing Forces of his Environment and thus gain Greater

Security for himself. In fact, I put him up to it. Social Life is a Technological Idea.

The Medicine Man Takes Over

With Social Life, so I thought, Man's Development and my Expansion would proceed at a faster Rate. I thought to build upon the Curiosity, Experience and Memory of Men. I reasoned it out this way. Every new Discovery, Invention or adaptation come upon by early Man had necessitated a rearrangement of his relationship toward his Physical Environment. The behaviour of Man before and after the Discovery of Fire is an Illustration in point. There was a Constant Progression of Social Change.

I thought that if Man's Insularity were ended and he took up Social Life, this Process would accelerate Technological Development. I thought that with a Number of Men reacting upon their Environment as a Group there would be more New Discoveries, etc. Consequently, old Inhibitions and Prohibitions would have to be Re-adjusted more frequently. This would tend to Eliminate one of my toughest opponents, Human Inertia, and give me a fluid, elastic Medium in which to Operate. It seems that I figured with too much emphasis on the Social Intelligence of Man and not enough upon his Cunning. For, *then came the Price System.*

Prior to the beginning of this System of Trade and Commerce, my record shows a steady development. My Tools progressed from the Simple to the Diversified, from the Crude to the Skillfully Wrought. The degree of my Application always kept pace with the Stage of my Development. There were no Buried Patents in the pre-Social History of Man. Instead, there was a long, slow but Steady Period of Expansion. Shortly after Social Life be-

gan, the proclivity of Man to adopt New Ideas slowed down.

For the next 5,000 years there was Little Social Change. Up to two thousand years ago, all over the world, Whole Peoples lived much the same as Neolithic Man had lived 10,000 years before. Indeed, as one Chronicler has written, this was the case with the great majority of Men in out-of-the-way places as late as the 19th Century A.D. Whence came this levelling off in the Rate of my Growth? It took me a long time to figure out, but I'm sure I have the correct answer now.

As I have told you, my Operations began at an early date in the life of Man. My original Sires were Nature and Physical Need. They begot Trial & Error, who was my Mother, and Empirical Knowledge, my Father. Unfortunately, I was not the only child of my parents. They spawned a large Brood. Among these were Superstition, Tradition, Greed, Shrewdness and Venality. These latter grew into Strong, Cunning Operators in a short time. They did not take to the same things I did. I was interested from the first in Conquest of the Physical World about me. They went off on all sorts of Odd Tangents, exploring that Egocentric, Inner World of the intangible. I was driven by an insatiable Desire to know the How and Wherefore of Physical Phenomena. They dived after Abstract Concepts. I was interested in Social Change. They were satisfied with the Status Quo.

They were always Discussing Abstract Concepts. The only question they would entertain about Physical Phenomena was how to manipulate them so as to maintain the Status Quo. This attitude of Superstition, Tradition, Greed, Shrewdness and Venality was then, and is now, the source of my Greatest Difficulty.

However, I kept on Pestering them with New Ideas. After a while, Superstition and Tradition got sore about it and tried to throw me to the wolves.

Greed, Shrewdness and Venality cautioned Hesitation. They said:

After all, we've made good out of some of the New Ideas Technology has brought in. We are Stronger than he is and can Accept or Reject his proposals as we see fit. He may bring in something Good anytime. Instead of kicking him out, let's Fix It so that Technology is under our control. We may need him some day. You never can tell.

So they fixed it, and that fixed me for a Long Time. However, the scheme they worked out will be their own undoing. It has some Fatal Contradictions in it.

All Shoddy and World Wide

After much weaving of Abstract Concepts, Superstition, Tradition, Greed, Shrewdness and Venality concocted the Price System of Social Life. This is a System organized and circumscribed to the single Function of Producing and Exchangnig Goods and Services for a Fat Profit. At first reading, this sounds harmless enough. I can assure you, however, that it has made a mess of Man's Social Life ever since it began.

The Idea to Exchange Goods and Services for Profit runs counter to my Historic Role. This, of course, is to Produce and DISTRIBUTE goods and Services as a Function of Man's relationship to his Physical Environment. I had Progressed Steadily at this for ages. The larcenous Concept of Exchange for Profit crept in about the time that Family Life developed into the more complex and diversified Tribal Organization. It is a low-born

'Johnny-Come-Lately' in the long life of Man.

It was not derived from the Physical World of Things and Events and Functions associated therewith, as my Idea of Social Life had been. It spawned from that Egocentric, Inner Domain dominated by Superstition, Tradition, Greed, Shrewdness and Venality. This Price System of Exchange for Profit has thrown obstacles in the path of my historic Function ever since it began.

Its network of Mercenary Rules and Rewards sets Man against Man, individually and collectively. In doing this, it subverts the original Purpose of Social Life. This, if you recall, was to obtain Greater Security for the individual by organizing him into Groups. This would Multiply his Strength Geometrically against the Opposing Forces of his environment. Social Life was a Technological Idea, a Tool or Device, if you please.

The idea of Exchange for Profit cancels the Technological advantages out of Social Life and reverts it back to something Lower than the Code of the Jungle. At least, that is not meretricious. The inherently Anti-Social nature of the Price System is an integral Part of its Framework and Operating Rules.

There is a basic conflict between the Technological Function of Social Life and the Price System's prostitution of that Function. However, Individuals are not to be blamed, it is the System which is at fault.

99.44 Percent Sham

They founded their Price System on Natural Scarcity, a Physical Factor, and Value, an Abstract Concept. On top of this they built a towering superstructure of Trade, Commerce, Business, Politics and Ecclesiasticism. This was then covered over with a shroud of Camouflaging Foliage com-

posed of a Choice Collection of Empty and Sugar-Coated Concepts. Any good textbook on politics, economics, morals or philosophy will give you the whole list.

They are the Treasured Darlings of the Status Quo. Seventy generations of men have been born, raised, and have died to the tune of their Dulcet Sophistries. But I, Technology, know that 10,000 generations went before who knew Naught of these Empty Concepts. I know that down underneath the Mountains of Sophistry old racial memories run deep. A Correct Idea never dies.

In the setup of the Price System I, Technology, was assigned a Minor Role. This consisted of regulating the Handicraft-Agrarian Methods of Production. My only Implements were Human Toil and Hand Tools. Thus my Development was Frozen approximately at the Level I had reached in the Late Neolithic Period. In substance, I became a Prisoner within the Framework of the Price System, at the beck and call of the Blessed Minority on top of the Social Dung Heap. Nevertheless, I, Technology, was the Physical Factor underlying the whole Structure. Without Technology, no matter how crude, Civilization would Relapse into savagery.

The only Real Concept in the whole Price System structure was Natural Scarcity. It was a Physical Factor always present in Man's environment. Without Natural Scarcity the Price System could not have endured. It Validates the Big Abstract Concept called Value and lends Credence to all the smaller ones. Natural Scarcity and I, Technology, are old enemies. We have Fought on a thousand battlefields. He always won because in my earlier days my Stage of Development was too Low. Then, ever since the Price System be-

gan, I've been limited to the use of Human Toil and Hand Tools and Handicraft - Agrarian Methods, in fighting him. This has been so all over the world except on one Continent. We'll come to that part of my story later.

Another Factor which had always Handicapped me in my struggles against Natural Scarcity was the fact that I, Technology, had never had Command of Enough Energy. The Forces of Energy are the Shock Troops of Technology. Although I had shown considerable Ingeniousness in the past in Improving Tools and Weapons, I had always been Held Down by this shortage of Energy. By Energy I mean Power, the power to do work such as is derived from Human Muscles, Work Animals, Water Wheels and Windmills. The output I was able to Produce of anything was always Geared Down to the amount of Power available from these sources.

Any high school book on physics will reveal that this amount is Negligible. The best I was able to do in the past was to Improve Skills and Implements. The only Tool with which I could ever hope to Defeat Natural Scarcity was Greater Production. This requires more Power, i.e., Energy, as well as better Skills and Implements. I was never able to Achieve this to any great extent except on One Continent. I'm ahead of my story again. We'll have to get to that later.

They Say The Sun Stood Still

All during the past, the only source material and references I could go to for Inspiration were my parents Trial & Error and Empirical Knowledge. Although they have piled up a tremendous output of Fable and Supposition in their long career, these two have not put out much Reliable Accurate Information. They were never of much help to Me. That had some-

thing to do with the Slowness of my Development in the past. A much better source of Inspiration was needed if my methods were ever to graduate from the Hit and Miss class. After a while, it came.

For the first 6,000 years of the Price System, Physical Conditions remained Static. These underlying Factors were Human Toil and Hand Tools and Handicraft-Agrarian Methods in combination with Ever Present Natural Scarcity. I, Technology, was Confined to a Limited Scope of Operations. Consequently, the Superstructure of the Price System, composed of Business, Politics, Ecclesiasticism, etc. was static also. There was no Social Change.

Superstition, Tradition, Greed, Shrewdness and Venality fought for and switched control of the Social Dung Heap among themselves for ages. There were many Wars. In fact, one eminent Society of International Law has estimated that in the last 4,000 years the Price System has produced 8,000 Peace Treaties but only 268 years of Peace. All these Wars added not one jot or tittle to the General Welfare of Man. They served excellently, however, as a Medium to enable one or the other Controlling Force to Climb to Eminence over Men's Graves. The Level of Civilization remained low. This, of course, was because I, Technology, was Restricted. It is a truism that the Level of Civilization is everywhere Dependent upon the Stage of My Development plus the Degree of my Application.

About 1,500 years ago a particularly Low and Barren Period of the Price System began. It lasted about 1,000 years. Superstition, Tradition, Greed, Shrewdness and Venality enjoyed their Greatest Reign then. More of the lowest and vilest Elements in

Society climbed to the top of the Social Dung Heap than ever before or since. It was the Golden Age of the Price System. These Elements concocted a new social dictum called Authoritarianism. This means Blind Obedience to Arbitrary Governance by Dogma. They crammed this down the throats of Men with Fire and Sword, Rack and Dungeon. I, Technology, was forced to flee from the Western World. Fortunately, I found a Favorable Territory in which to Expand in the East. Even Empirical Knowledge and Trial & Error were pushed into the Background. Then two things happened.

A First Time For Everything

A series of Physical Events occurred that caused a Revulsion against Authoritarianism to sweep over the Western World. Then a young and virile Stranger came riding out of the East. I would like to tell you about him first.

The Stranger's name was Scientific Method. He cast eyes upon Trial & Error and went for her, hook, line and sinker. Without ceremony or sanctification Scientific Method kicked Empirical Knowledge out of the picture and took Trial & Error to his Bed and Board. There was never a more fortunate Affair in the long history of Man.

It was a prolific Union too. Out of it sprang first, Observation, Research and Experiment, three beautiful Daughters. Then came that brace of stalwart Sons, Analysis and Synthesis. They always go together. If you hire One, you must also hire the Other, or else you get only half a job done. These five children grew up together. They were endowed with Intelligence and Integrity to an outstanding degree. I, Technology, took to them from the start. Since then we have been inseparable.

After an interval, another little Stranger came to the House of Man. It was the last and greatest of the offspring of Trial & Error and Scientific Method. Its name was Scientific Knowledge. It has New Characteristics never possessed by Empirical Knowledge. It is Exact, Organized and Verifiable. It is easy to check into its Source Material and References to find Inspiration.

Empirical Knowledge, on the other hand, had for thousands of years, enshrouded its findings in Folklore, Fable and Opinions. In case you don't know, an Opinion is a mixture of Supposition, Conjecture and Imagination. In other words, just a Guess. After the Price System got going good, Empirical Knowledge became worse. It mixed Physical Phenomena and Abstract Concepts into totally New Messes called Philosophy and Ideologies. It got so bad that I, Technology, had to hunt like blazes among all this Rubbish to find one Single Little Fact. So you can imagine how gladly I welcomed the coming of Scientific Knowledge.

One of the first Prodigies he performed was to segregate Facts and Opinions into separate fields. This job had become necessary. Opinions had always tried to masquerade as Facts. This Organized Confusion hindered my Expansion. I had to be able to tell the difference between the two. I, Technology, cannot Operate with Opinions. I need Facts. This segregation was accomplished by the Daughters of Scientific Method, namely, Observation, Research and Experiment. They attacked Facts and Opinions with glee and a new Weapon which I had fashioned for the job. It is a Testing Formula called Definition of a Fact. It operates as follows:

A fact is the close agreement

of a series of Observations of the same Phenomenon.

All Concepts that cannot meet its Rigid Specifications are classed as Opinions. Since all Opinions are outside the field of Facts, they are equally invalid for my Purpose and Function. However, it's a Free Country and Science does not want to make it Less Free. Every man, therefore, has the inalienable Right to make as big an ass out of himself as he likes in his Private Life by blurting out his Opinions. Since all Opinions are Equally Invalid, his neighbor has the same Right. In fact, the right to wallow in the anarchy of Opinion appears to be a 'Natural Born Right' of Man.

However, he has another 'Natural Born Right.' That is the right to be protected from the anarchy of Opinion. When this anarchy overflows and produces Social Effects, the line must be drawn. Any Man who Parades forth his Private Opinions into the field of Public Social Problems is a Menace to the General Welfare.

Prologue to Social Change

The great rise of Scientific Knowledge came about this way. During the Golden Age of the Price System while the Western World was stewing in the Fetid Cellars of Authoritarianism I, Technology, was Expanding in the East. When Physical Conditions became right, I moved West. Whenever, in the past, any Human Culture had become Static and Decadent, I had moved in with New Technology and New Men to Take it Over. I did this with Neanderthal Man, with Cro-Magnon man and with lesser known races. My Tendency is to Expand. If I cannot do it in one Land or culture, I will do it in Another. Any Economy that adopts Technology must there-

after Expand in the Social Field to a plane compatible with its Demands, or die out.

Into the Sudden Atmosphere of Authoritarianism came my Products from the East. The Arabs, Jews, Hindus, Nestorians and Chinese contributed. Some of these Cultures had received their Impetus from Ancient Greece. There, Scientific Knowledge had gotten off to a Respectable Start 2,000 years ago. It had been Squelched by the rise of Authoritarianism. The Men of the East had received Greek science as a Heritage. They kept it Alive and Improved upon it to some extent. During and after the Dark Age, Scientific Knowledge came west.

By then I, Technology, had achieved the Manufacture of Paper and Printing. I had developed the Magnetic Compass, for offshore navigation. I had Gunpowder. With the Arabs I had worked out Decimals, the Concept of Zero, Algebra, Spherical Trigonometry, Chemistry, Physiology, Medicine and Astronomy. I worked with Metals such as Gold, Silver, Copper, Bronze, Iron and Steel. My Textiles were of the Finest quality. I excelled in Horticulture and Agriculture. I had Tinctures, Essences and Syrups and I made Sugar from the cane. All this I brought West with me, but the Most Precious Thing I brought was Scientific Method. It led to the Renaissance of Western Culture.

Among the Physical Factors which brought about my Return to the Western World were the following: During the 9th, 10th and 11th Centuries a Series of Invasions by the Normans into the South created Population Pressures and Unsettled Conditions. The causes for these Invasions were rooted in the Poverty and Hard

Living Conditions of the North, i.e., too much Natural Scarcity.

Between the 11th and 13th Centuries a series of Holy Wars was carried on between the East and West. They are called the Crusades. They were brought about by the Social Dislocations caused by the Norman invasions; by Mercantile Rivalry between the East and West; and by the Split between the Eastern and Western Branches of Authoritarianism.

In the 13th Century, the Mongol Invasions threw the Doors between East and West wide open. Following the Mongol Invasions came the Black Death. It swept over the Western World and killed over a quarter of the Population. In the 14th and 15th Centuries the *Travels of Marco Polo* were widely read. It created a Profound Impression.

Off To A Good Start

All these events stirred up a Ferment. Out of it flowered the Greatest Advance of Science yet known. It was the Renaissance of Technology. Following it came the Renaissance, a revival of Art, Literature and Learning, which had long been suppressed by Authoritarianism. Scientific Method, along with Observation, Research and Experiment bent themselves to a Study of the Physical Laws by which I, Technology, must operate. Scientific Knowledge became Greater. After a few hundred years of this, it culminated in the Industrial Revolution.

With the opening of the Industrial Revolution I, Technology, at last came into possession of a Superior Set of Tools with which to Operate. I now had the Scientific Method, and a growing body of Exact, Organized and Verifiable Knowledge. With these splendid Tools it did not take me long to design the Major Tool I had always lacked. That was Ex-

traneous Energy. With this Tool I will remake the world.

Earlier, in the East, I had tried to design Extraneous Energy. I had some success with the Expanding Force of Gas in the form of Gunpowder; but I had not been able to convert it into Power. Then, too, Superstition took it away from me and used it to make Firecrackers. He claimed that the loud, popping Noises produced would scare away the Devils. Later I used this form of Energy in warfare.

In Ancient Rome I had stumbled on the Idea of getting Power from the Expanding Force of Steam. That was an age of Human Toil and I was unable to apply it within that Framework. So Superstition took that Discovery away from me also. He used it to cause Idols to turn on their Pedestals and to revolve their eyes, and for the opening of Temple Doors. It went over big with his Followers as a source of Awe. My time was to come later.

The Factors which finally brought about the introduction of Extraneous Energy were two, both Physical. One was the great Range and Complexity of my Improvements in Handicraft Methods. The other was the Rise of a great, new Physical Need. In the 12th Century I had learned to use the Power of the Wind. I built Windmills for grinding grain. The first one went up in 1191 A.D. It was destroyed by the Abbott of the Monastery nearby. He said it was a Menace to Civilization. Can you imagine that? It has ever been thus with Authoritarianism.

I had built Water Wheels to use the Power of Running Water, much earlier. By then I had learned to use the Power of Work Animals almost to the maximum of their capacity on Grinders, Pumps, Hoists, Transport Vehicles, etc.

Before I developed Extraneous Energy I had devised the Factory System of Production. This sprang out of my much earlier Idea of the Division of Function. However, its Expansion had been limited. Although I had Textile Factories powered by Water Wheels, their Ability to Produce was small. By then I had also gone in for the extensive Use of Iron. I had devised Mechanisms like the Crossbow, the Cannon, the Printing Press, the Loom, and others. This led to a greater use of Iron. I developed Forges and Blast Furnaces powered by Water Wheels.

This growing Range and Complexity of my Improvement of Handicraft Methods led to a much greater use of Fuel. At first I burned Wood. As the Forests dwindled away I turned to Coal. As the Coal Mines went deeper into the Earth, the problem of pumping out the Water which seeped in became too great for my Simple Devices. So I turned to the Power in Expanding Steam. Once again in the history of Man arrived a period when a great Physical Need arose. A Function needed fulfilling. So I, Technology, went to work as an Idea and invented the *Steam Engine*.

Try and Stop Me Now

At last I had Extraneous Energy at my Command. My Ability to Produce jumped immediately. Scientific Knowledge was by now turning out a Volume of Exact, Organized and Verifiable information. I delved into this for Inspiration. My Rate of Development speeded up. Soon the Western World was Powered by Steam. The Machine Age had dawned. The Industrial Revolution was on.

I soon learned how to use the Expanding Power of Gas in another Form. That was the Internal Combustion Engine. The idea came from my earlier Experiments with Gun-

powder. So I now had two Prime Sources of Power never before available. I had learned how to use the Molecular Energy in fossil fuels. Natural Scarcity began to take it on the chin for the first time, as Greater Production entered the picture.

Then Superstition, Tradition, Greed, Shrewdness and Venality went to bat once again to Maintain Natural Scarcity. They wove some more Abstract Concepts together and concocted a new Interference to my Development. It is called The Patent System. Ostensibly, it is supposed to be a set of Rules to Reward Incentive, Stimulate Initiative and protect the right of inventors to Extract Profits from their inventions. The Patent System is something else also, much more anti-social. The Rules are so drawn as to protect the Intrinsic Property Rights of Inventors in their Devices. Thus, they can do with them whatever they please. They are not compelled to Apply my New Developments, but they may withhold them from use altogether. Or, they may Sell these Property Rights to some one else, who may then Bury the Invention for all that anybody cares. The Patent System has grown into a Gigantic Graveyard for some of my Best Ideas. It has been said, however, 'That which goeth down to the grave shall rise again.'

In spite of this I, Technology, have gone ahead inventing New and Better Mechanisms, devising More Efficient Processes and tapping New Sources of Extraneous Energy. About a hundred years after the advent of the Steam Engine. I conquered the Electric Current and put it to work. This is my greatest Achievement up to date. Before this it had been necessary to couple my Mechanisms directly to my Prime Sources of Power by means of Belts, Pulleys, Shafts, Gears, etc.

I found that the Electric Current could be transmitted over a wire from its Generator and applied to any Mechanism by means of a Motor. This freed the Machine from its previous Limitations and ushered in the Power Age. I now have excessive quantities of Extraneous Energy available from such sources as Coal, Oil, Gas, Wind and Falling Water. In addition to these sources of Molecular Energy mentioned, I, Technology, have just lately managed to release the Energy of the Atom.

Scientific Knowledge seems to think that there is a limitless source of Extraneous Energy available in the fission of the Atom. The only thing I have achieved with Atoms as yet is to Explode them in the form of Bombs. This Development came out of the high pressure Physical Needs of warfare. I have not yet mastered the Control of Atomic Energy as Power. Even if it can be achieved, the question is what is the use? On the North American Continent Man and I, Technology, already have more Extraneous Energy available than Superstition, Tradition, Greed, Shrewdness, and Venality will permit us to apply.

New World Symphony

In North America I have developed further into the Power Age than anywhere else on Earth. The average Man on the street, however, does not benefit much from it. As late as 1943 A.D., the Records show that 75 percent of the population received less Purchasing Power than is considered sufficient to Buy a decent Standard of Living, i.e., less than \$3,000 a year. That's the Price System for you! Strange as it seems, if the entire Population ever got an adequate Standard of Living under the Price System, the System would collapse at once upon achieving it.

Through the application of Phy-

sical Laws and Extraneous Energy I, Technology, have achieved that Greater Production sought all throughout the ages. Yet scarcity still persists. To be sure it is no longer Natural Scarcity. I killed him off in North America a generation ago. However, through the machinations of Superstition, Tradition, Greed, Shrewdness and Venality he was metamorphosed into Artificially Maintained Scarcity. The net end result in low Living Standards is the same.

Thus, Man is being robbed of the Fruits of Technology, because of the Operating Rules of the Price System. It must maintain Scarcity at all costs, for that is the only Real Physical Factor in its entire Sorry Makeup. They know well that if deprived of Scarcity, their structure will collapse. The General Welfare of the other 98 percent of the Human Components involved is of no importance to the 2 percent who control. Their God is the God of The Market Place.

Their System of Social Life is circumscribed to the business of Producing and Exchanging for a Fat Profit. The Fatter, the better. Therefore I, Technology, am allowed only to Operate as much as is necessary to make Profit out of my Operations. This anti-social Rule of the Price System has held me back. There is, however, a Fatal Contradiction in it for the Price System, for whenever any Economy attains a sizeable application of Technology and Energy, it must constantly Increase that Application. It comes about this way.

Cash Register Blues

The Primary Rules of the Price System are: Buy Low, Sell High, Keep Things Scarce. Its Operating Philosophy is 'Laissez Faire.' This means 'Let Me Alone So I Can Obey The Three Primary Rules.' There are only two sets of Physical Condi-

tions under which it is possible for these Rules to Operate successfully for any Length of Time. The first is under a static Handicraft-Agrarian setup of Human Toil and Hand Tools. The other is when the Price System is in a State of Continuous Expansion. Neither set of Physical Conditions can exist for long after I, Technology, enter the picture.

The three Primary Rules make it compulsory for an Entrepreneur to Operate at a Profit. To do this he must chisel out a Preferential Position for himself in the Market Place. He must Undersell, Outsell, or Outmanipulate his Competitors. They face the same Compulsion. Everyone involved must attempt to Hog as big a share of the Market as possible. The Physical Conditions created by these Compulsions are right up my alley. Underselling, Outselling and Manipulation tend to force the Introduction of more Technology and Energy.

Thus, a curious Thing happens. Business in its attempt to obey its own Three Primary Rules is driven into a direct violation of them. Buy Low, Sell High and Keep Things Scarce are incompatible with Increased Application of Technology and Energy.

In order to Escape the consequences involved, Business is driven to combine into ever larger Units so as to Control the Market. This practice is also a violation of the Primary Rules. The Combining of Businesses into Corporate Trusts and Cartels tends to the introduction of Newer Technology and More Efficient Use of Energy by New Entrepreneurs. Thus, my Impact upon the Ancient Price System Structure continues to mount in effectiveness.

Through Greater Efficiency I, Technology, constantly Reduce the Man-Hours of Labor required for

any one Unit of Production. Business just loves this because it Reduces Unit Labor Costs and Increases Fat Profits by cutting down the Total Man-Hours of Labor necessary. Because of its nature, Business is unable to prevent this process from reducing Total Mass Purchasing Power.

This, of course, is the ability of the Human Components involved to Buy Back the Products of Industry. If Purchasing Ability is not equal to Production Ability, the Market dwindles and Depression sets in. This stimulates the Introduction of more Technoligy and Energy again. Overall Costs must be reduced in order to Operate at a Profit in a Dwindling Market. The very process of Reducing Overall Costs also reduces Total Mass Purchasing Power still further by driving Total Man-Hours of Labor lower. It seems that Business is now in the Business of putting itself out of Business. Hurray!

No Tickey, No Washeel!

Involved with the Lowering of Overall Costs and a Dwindling Market are the necessity to manufacture Cheaper Products and create Artificial Demands. The latter is done by Advertising and other Economic Hocus Pocus. Perhaps, if the Price System could Advertise itself into a System of Trade and Commerce wherein everybody Lived by taking in each other's Washing, its problems would be solved. There would have to be Rigid Standards of Dirtiness. Business couldn't afford to have its Apple Cart upset by Radicals who insisted on keeping too Clean. It would only lead to the Introduction of Technology. In fact, There Ought to be a Law so that it would be unconstitutional to be caught with a Clean Shirt except on Sunday. Three jeers for Good Old Business!

Getting back to our Story, the only way to raise Total Purchasing Ability in proportion to the Decline of Total Man-Hours of Labor is to boost Wage Rates. This increases Unit Costs again and promotes the introduction of More Technology. The efforts of Business to balance Exchange and Profit against Energy and Technology reminds me of a blind man in a dark room chasing a black cat that isn't there.

There are other Fatal Contradictions involved in the Idea of Exchange for Profit, such as: Limitation of Natural Resources, Expansion of Debt, Decline of the Interest Rate, etc. They are too involved to explain here. However, you may rest assured that it is a Physical Impossibility for the Price System to balance Production and Purchasing Power. The nature of its own Operating Rules makes it impossible.

Indeed, it was never interested in that. Such a Functional Idea is foreign to its Purpose. Yet if it does not accomplish it soon, it will destroy itself. That is the Dilemma of the Power Age, which I, Technology, have brought about on the North American Continent.

So far the Price System has evaded this Dilemma by resorting to a series of Stop-Gap Alternatives. Among these are: Government Charity to Business in the form of Fat Contracts, Cost-Plus, Subsidies, Carry-Backs, Government Distribution of Purchasing Power to the Human Components involved so they can Buy the Products of Government-Supported Business, Foreign Wars, Foreign Loans, Installment Buying, Waste and Shoddy Goods. But, it's no use. These alternatives lead only to Higher Taxes, Lower Interest Rates, Greater Debt Loads, Depreciated Credit, Inflation, Deflation and

still Lower Total Mass Purchasing Power. It's like a Habit-Forming Drug, the use of which makes it constantly necessary to increase the dosage to get the Desired Effect.

I, Technology, am reducing the Alternatives faster than they can be adopted. Soon there will be only one alternative. It will be a choice between Science or Chaos. All down through History, I have eliminated Inferior Technologies and Men in favor of Better. It is the Law of my Growth. The Degree of my Application must keep pace with the Stage of my Development. This applies to both the Social and Industrial Field. There is no Recourse anywhere. These laws are inexorable. That is how I MUST Operate.

Oldest Trick In The Book

Since I obtained command of Extraneous Energy I have adopted a new Strategy toward my ancient enemies, Superstition, Tradition, Greed, Shrewdness and Venality. With Scientific Knowledge, I was able to split them against each other. Scientific Knowledge had an irresistible Appeal for Greed, Shrewdness and Venality. They saw an opportunity to use him for still Fatter Profits. In this they have been Successful.

Superstition and Tradition objected. They realized the danger involved. They saw that if Greed, Shrewdness and Venality took Scientific Knowledge on, it would turn into a Frankenstein that eventually would destroy them all. It was no use. The Lure of Fatter Profits was too great. Today, Greed, Shrewdness and Venality have built great Research Laboratories all over the land for Science. In 1900 there were only a baker's dozen of such Kept Institutions in the U.S. Today, there are thousands.

Science does not know that it is playing a Double Dealing Role. Nei-

ther does Greed, Shrewdness and Venality. All four have one-track minds. Science is interested only in the Pursuit of Knowledge for the sake of Knowledge. The other three are interested only in Science as a source of Fatter Profits. They still imagine that they can manipulate Physical Phenomena and maintain the Status Quo at the same time. I, Technology, know that they cannot.

Scientific Knowledge has created marvelous New Jewels out of Pure Science. From their Ivory Towers they hand these gems down to Greed, Shrewdness and Venality. The latter turn them over to me to Convert into Fatter Profits in the Market Place. Brother, how I love to play that Role. Yes, indeed, the chiseling Triplets of the Price System have sold out their ancient alliance with Superstition and Tradition. The Deal was consummated under the blessed banner of High, Low, Close.

I have little left to fear from Greed, Shrewdness and Venality. All they need is more Rope. They are hanging themselves. My real enemies now are Superstition and Tradition. They are inflexibly rooted in that Occult World of the Metaphysical from which emanate Man's worst Fears, and in the Dead Past from which reaches his greatest inhibitions. They hate me, Technology, with an undying hatred. From out of the depths of their Dark Concepts they curse the day I was born.

For at least a half million years Superstition and Tradition have ruled the minds of Men. They are his Natural Born Enemies. They have always restrained him from a Better Existence on this Earth. He, poor fool, doesn't even seem to know it. He cuddles them to his Breast with prayerful fondness and nurses them with the Substance of his Life. All

they ever gave in return was Belief and Opinions. These are the chains that tie Host and Leech together to the Dead Past.

Superstition and Tradition are strong, cunning and devoid of Scruples. They will stop at nothing to overcome Technology. All down through History they have led the Parade in every Counter-Revolutionary movement against the General Welfare of man. They are the Concentrated Essence of the Price System. I know them of old. I know all their Dirty Tricks and Methods. I have grown much Wiser, as well as Stronger, in the last few hundred years.

Nobody Is Perfect

I think that I have it all over Superstition and Tradition in every way, except One. Like Achilles I, Technology, am invulnerable in all but one Spot. That spot is Social Violence. Under those Physical Conditions, I am easily destroyed. In this respect I am Tenuous. Social Violence is my Greatest Weakness. This is even more pronounced in the advanced stage of the Power Age to which I have developed in North America than it ever was before.

Previously my Development was Cruder and Simpler than now. During the early stages of the Industrial Revolution, I became more Complex and Diversified. Even then I was more resistant to Social Violence. My Centers of Production were of necessity close to the centers of my Sources of Primary Power. I had no Secondary Movers then. Consequently, my Structure was more Integrated and easier to defend. Now, it is a different Story.

Since I mastered the Transmission of Power over a Thin Wire, my Centers of Production can operate from Secondary Movers energized from

a distance. This has led to Decentralization of Production to a large extent. This makes me more Tenuous than ever. My Centers of Production are harder to Defend and easier to Destroy. Unless I can devise some Method to overcome this Weakness, I will have to watch my step carefully. Superstition and Tradition grow fat on Social Violence. They have instigated it on Numerous Occasions in the past.

In addition to the Weakness inherent in Decentralization, there is an equally great Weakness involved in the Modern Complexity and Diversification I have attained. My Techniques require Constant Balance and Adjustment between their various Functions. There must be complete and Vertical Control at all times. Let this be disrupted in one part, and the Power goes off, the Lights go out, and the Flow Lines Stop.

I am not revealing any Secrets when I tell this. Superstition and Tradition know it well. Rather am I calling it to the attention of Men because they will benefit from my Continuous Operation and Expansion, and will be the ones to suffer if I am Destroyed. They cannot Live without me. In view of this, I have been forced to advance a Postulate. It is to the effect that: 'Any person or Group advocating Social Violence as a Solution of Social Problems in the Power Age is guilty of Treason against the Continent of North America.'

The showdown between Superstition and Tradition and I, Technology, will come soon. It is long overdue. Social Problems are insoluble within the Framework of the Price System. It has a demonstrated Record of Futility. My Record, on the other hand, shows Accomplishment and Constant Progression in

spite of Interferences. I will not stand alone at the Armageddon of the Price System. I have Volumes of Factual Testimony and many Able Allies on my side.

Always With You

I, Technology, was with that running-walking Ground Ape of the Cenozoic Era, waging his precarious battle for existence with only his Bare Hands and the Sticks and Stones I was able to provide as Tools and Weapons.

I was with that sub-man *Pithecanthropus erectus* who faced up to the terrible sabre-toothed tiger with only a Club and a Stone Knife. Where would he have been without them?

I was with the Neanderthal Man who fought the great cave bear and defied the Last Ice Age with the Fire that I taught him to Conquer and Control.

I was with the Cro-Magnon Man who developed Tribal Life and Organization, who carried my Technology further than it had ever been before and brought Art into the world for the first time.

I was with that Early Neolithic Man who conquered the Cro-Magnon Race to the twang of the Bowstring and the long reach of the Piercing Arrow.

I was with that Late Neolithic Man who mixed Copper and Tin together into Bronze and cast it in Moulds patterned after his best Stone Implements.

I was with that unknown Artisan, at the Dawn of Civilization, who first Smelted Iron in open pits, who later built his Furnace in the side of a hill and still later Invented the Belows to make his Fire burn better.

I was with that uncredited worker who made the first Bricks and Thin Clay Writing Tablets; and the pedagogue who advanced beyond Picture

Writing and designed the first Wedge-Shaped Syllables.

That was in the world's first-known civilization in the Sumerian City-States of the Euphrates-Tigres Valley. I was with the forgotten Agriculturist of that valley who developed the first Hydrology System of Irrigation Trenches and Canals.

I was with that uncouth Fellah of Ancient Egypt who mastered the Principle of the Lever and designed the first Shadoof to raise Water from the River to pour over his growing crops.

I was with the host of Unsung Artisans and Experimenters of those Ancient Civilizations whose Combined Efforts mastered the principles of my four basic Tools; the Lever, the Inclined Plane, the Wedge, and the Pulley or Wheel.

I was with that slovenly son of a Stone Mason called Socrates who exposed the Beliefs and Opinions of his time to the acid of Intelligence. They killed him for 'corrupting the youth of Athens.'

I was with Democritus 'the laughing philosopher' of ancient Greece, the first Man to suggest the Atomic Theory of Matter. I knew then that 'atoms combined with each other to form different bodies.' However, I did not yet know what composed the Atom.

I was with Hippocrates, the Father of Medicine, who combined Observation, Research and Experiment with Inductive Reasoning for the first time in the Art of Healing.

I was with Ptolmey, natural son of Philip of Macedon, and one of Alexander the Great's Generals, who founded the first University in the world at Alexandria, Egypt. For more than a century Scientific Knowledge blazed brightly there. Of my pupils there Eratosthenes measured the

size of the Earth and missed the correct answer by Only a few hundred miles. That was Good Going then. Hipparchus mapped and catalogued the Stars for the First Time there. Hero devised the world's first Steam Engine there. Archimedes, who excelled in Astronomy, Hydrostatics, Mechanics and Optics, studied there. He invented the Revolving Screw and devised the first Multiple use of Pulleys. Euclid who digested the mathematical principles of Thales, Pythagorus and Eudoxus into the regularity and order of Arithmetic and Geometry, was a pupil. Herophilus began Anatomy there. He showed that the seat of Intelligence was in the brain and not in the heart.

Scientific Knowledge died out in Alexandria after about a century and Pedantry and Philosophy moved in. That was in the 3rd Century B.C. The Library of the Museum was the greatest in the Ancient World. In 390 A.D. one large Section of it was destroyed by Bishop Theophilus. He said it was a seat of Pagan Learning. In 640 A.D. the Mohammedans burned out the rest of it. They said it was not a seat of Mohammedan Learning. It has ever been thus with Authoritarianism.

More Witnesses At The Bar

I was with the Civil and Military Engineers of Ancient Rome who built Sanitary Systems, Bath Houses and the first Central Heating System, the Hypocaust, and who designed Roads and Aqueducts that endure to this day.

I was with Haroun al Raschid, Caliph of Bagdad (763-809) who, after Authoritarianism began to squelch Scientific Knowledge in the Western World, invited Learned Men of all countries to come to Arabia and paid them good salaries. With his reign began the rich and many-sided

intellectual life of Arabia which preserved the Scientific Knowledgs of Ancient Greece, added to it and ultimately returned it back to the West.

I was with Roger Bacon (1210-1293), that rebel monk, whose Studies were so successfully buried by Authoritarianism that they were not uncovered for 500 years. He wrote:

Cease to be ruled by dogmas and Authorities; *look at the world!* There are two modes of investigation, through argument and through experiment. Argument does not suffice but experience does. Experiment! Experiment!

For saying that, Roger Bacon spent 20 years in jail, without Writing Materials, Books or Instruments. I, Technology, was there with him.

I was also with the alchemists of the 13th and 14th Centuries. They didn't know it. They pursued Magic. They sought to turn base metals into Gold. They hunted the Grand Elixir that would cure all Diseases. In these pursuits they pried into the Secrets of Nature. They uncovered much Empirical Knowledge about Poisons, Dyes, Glass and Metallurgy. Later, Scientific Method translated much of this Empirical Knowledge into Scientific Knowledge.

I was with that Brilliant Galaxy of Men who pushed back the frontiers of Scientific Knowledge during the 15th and 16th Centuries. There was Leonardo da Vinci, Copernicus, Tycho Brahe, Thomas Digges, Bruno (The Inquisition of Authoritarianism burned him at the stake), William Gilbert, Francis Bacon, Vesalius, Paracelsus, and others. They brought Scientific Method to bear upon Nature and uncovered many of its Physical Laws.

My Name Is Legion

I was with that group of 17th

Century searchers for the Laws by which I must Operate. There was John Kepler, Galileo, Isaac Newton, Harvey, Descartes, Leeuwenhoek, Robert Boyle, Christian Huygens, Toricelli, von Guericke, Malpighi, etc.

During the 18th Century I, Technology, carried my pursuit of Scientific Knowledge still further. There was Coulomb, Herschel, Wilson, James Bernouilli, Laplace, Cavendish, Denis Papin, Black, Priestly, Linnaeus, Hutton, Newcomen, James Watt, Benjamin Thompson, Benjamin Franklin, and Antoine Laurent Lavoisier (1743-1794). Lavoisier took the prefix *al* out of alchemy and founded Modern Chemistry. He was guillotined by Radicals of the French Revolution. In sentencing him, the honorable Judge said: 'The Republic has no use for Men of Science.' His head rolled in the basket and his body was thrown into a nameless grave. But I, Technology, lived on in his work.

In the 19th Century a still greater galaxy of Men came into my Service. Scientific Knowledge was becoming less difficult to accumulate. That was because by now my Researchers stood upon the shoulders of a Growing Number who had gone before and done more primary work. There was von Helmholtz, Joule, Lord Kelvin, Carnot, Clausius, William Thompson, Fraunhofer, Maxwell, Willard Gibbs, Gauss, Volta, Galvani, Ohm, Berzelius, Humphrey Davy, Faraday, John Dalton, Ampere, Mendeleef, Oersted, Arrhenius, Darwin, Pasteur, Koch, Lister, Gregory Mendel, Daimler, Mayer, Hertz, Lyell, Silliman, Audubon, Joseph Henry, Asa Gray, Torrey, Agassiz, Dana, Leidy, Marsh, Cope, Newcomb, Burbank, Osborn, and many others.

Besides this there were countless

thousands of known and Unknown Individuals through whom I advanced. The list is very long. Today, in North America, the Roster of Scientists, Engineers and Technicians, numbers millions. Many of them tower head and shoulders above the greatest names of the past. Scientific Knowledge has grown to Gargantuan Proportions. The advances of all previous history pale into the Kindergarten Class beside the great gains I, Technology, have made in the last 45 years.

'The Felon Days Malinger'

In comparison to this partial list of Great Names who bear witness to the Prodigies that I Have Wrought, how many Witnesses can Superstition and Tradition call upon. How many Prodigies have they wrought in the past that have redounded to the General Welfare of Man.

We Listen closely and Look attentively as Thousands of Centuries march by, one by one, in darkness and silence. From the Pliocene Period, many millions of years ago, to the latest tick of the clock in the 20th Century A.D., we look and listen in vain. Not a solitary Factual Witness comes to the Bar, either Quick or Dead. Superstition and Tradition have wrought only damage to the General Welfare of Man.

Today, with what I know of Physical Laws and with my Stage of Development, it is possible to set up a New and Higher Civilization in North America. I, Technology, have the Men, Machines, Materiel and Know-How. The Blueprint of Social Operations is all ready. This does not apply to the rest of the World as yet. There, for the most part, my Stage of Development has Lagged because of Poverty of Natural Resources and Abundance of Authoritarianism.

In North America I, Technology,

have already created the Framework of this Higher Civilization. It was sponsored in part by Greed, Shrewdness and Venality. They don't know it yet, but North America's great Capacity to Produce, which they encouraged me to build so that they could Extract Fatter Profits from the Market Place, is the Framework of a New Culture within the Shell of the Old. It's Too Late for them to Backtrack out of it now. There is too much Capital Investment at Stake. Once Technology is applied to any extent, a set of Circumstances is set up which forces its Continuous Expansion.

My Real Danger comes from Superstition and Tradition. They would like nothing better than to go back to a Lower Level of Culture when my Stage of Development was simpler. They would like to Freeze Human Society at that level. That is what Fascism is, i.e., a social movement backwards. That is what Authoritarianism wants. In fact, the two are but different names for the same thing. The behaviour they exhibit today is the same shown since they overthrew Ancient Civilization. They have learned nothing New and forgotten nothing Old.

Lately, Superstition and Tradition have been trying hard to make up again with Greed, Shrewdness and Venality. They are pointing out to them the Inevitable Effects of the Impact of Technology upon the Social Order. The lot of them got together recently and waged a bloody World War in an effort to turn the Clock Back. They were beaten on the Battlefield but retired safely to their Political Rostrums, Corporate Offices and Clerical Temples on Both Sides of the battlelines. There they are plotting a still greater Counter-Revolutionary Move.

The Forces of Authoritarianism are

moving into the Social Institutions of the North American Price System. They have made a great deal of progress. Their object is to take over in collaboration with Greed, Shrewdness and Venality and revert everything Backwards. They are preparing to Sell North America down the river of World Fascism under the wings of the Gentle Dove of Peace. The Greatest Sellout of All the Ages is going through the mill right now.

To go backwards is Not the Destiny of North America. That is NOT how We got where we are Today. America became Great through the Expansion of Technology. Her Greater Destiny is to move into a Higher Form of Civilization through a still Greater Expansion of Technology. If you do not believe me, just follow Roger Bacon's advice, 'Look at the world.' Look at your Physical Environment Today. I, Technology, am All Around You.

In My House Are Many Mansions

I am the gigantic Industrial System of North America, the rich Iron, Coal, Copper, Lead, Zinc and other Mines. I am the great Steel Mills which light up the night skies at Pittsburgh and Gary.

I am the railroads running night and day up and down and across this Broad Continent.

I am the Telephone System which links every Home, Office and Plant in North America with every other one and is in Operation 24 hours a day.

I am the great Hydroelectric Dams and the Central Steam Plants that generate Electricity. My Current flows smoothly and silently along the transmission Lines. Interrupt my Flow and you Die.

I am the Radio that transmits Music, News and Propaganda with the speed of Light.

I am the all-seeing eyes of Television. Greed, Shrewdness and Venality have been figuring for a long time how to convert me into Profit. So far, they have not succeeded. That is why you do not have Television yet. The rule of the Price System is that Goods and Services must be Exchanged for Profit.

I am the Sprawling Factories of Detroit, Chicago and many other places. The ingenuity of my Applications there almost knows no bounds.

I am the whirring Presses turning out mountains of Books, Magazines and Newspapers full of the Propaganda of the Price System. Their content is no concern of mine. I only work there.

I am the fleet of Barges and Boats that ply up and down North America's inland waterways, from the Panama Canal to the Arctic Ocean.

I am the gleaming Passenger Planes flying from ocean to ocean in seven hours, and the Helicopter which flies forwards, backwards, up, down and sidewise.

I am the Agricultural Machinery of North America which produces an abundance of Cereals, Fruits, Vegetables and Meat. When your Ability to Buy my Products falls too low, they are sprayed with Poison, Plowed Under, Killed or Dumped in the ocean. Artificial Scarcity must be maintained at all costs now that Natural Scarcity is dead. You wouldn't want the System of Exchange for Fat Profits to Collapse, now, would you?

I am the great Textile plants that weave on Automatic Looms. I am the Synthetic Rubber Plants turning out a Product superior to Nature's best.

I am the New Synthetic and Plastic Industry turning out Products that don't even exist in Nature.

I am the Chemical Industry rearranging the Molecule and Atom, the

better to suit the Functions that Man needs fulfilling.

I am High Frequency Induction Heating, the Super-finished Part, High Tolerance Specifications and the Deep Freeze.

I am Wood Technology, Light Metals, Ferrous and non-Ferrous Alloys, I am the Tungsten Carbide Cutting Edge. What a far cry from the Stone Knife of *Homo Neanderthalensis*. I came every Foot of that long way.

I am Electrification of Industry, Mechanization of Farming, Hydroponics and Agrotechnology. I am Automatic Mechanisms, the Photo Electric Cell and Electronic Controls, making possible Large Scale Operations in any Field of Production. My Processes will work just as well in the Field of Distribution.

I am the Spreading Network of Highways reaching into every County in the Land. I am the Automobile, the Motorcycle, the Bus and the rugged Jeep speeding along from town to town. I am the tireless Trucks poking their powerful eyes through the night from New York to Kansas City to California.

I am the beautiful Steel Towers reaching into the sky above congested Cities from coast to coast.

I am almost 2,000,000 Machine Tools and the 1,500,000,000 Installed Horse Power of Prime Moving Engines in North America.

Half Slave and Half Free

I am the Scientist in his Ivory Tower, turning out his wondrous jewels. I am the Engineer applying Mathematical Principles to Natural Forces. I am the Technician supervising the machines of Industry. I am the Army of Skilled Personnel in all Fields of Production, attending my Mechanisms, maintaining them and Functioning on their Assembly Lines.

I am the Engineer's Flow of Production; and the Line Chart Blueprint of Operation. Mechanics'

I often wish that these Men in My Service could lift their eyes from the Rut they are in long enough to Catch On To The Idea of the importance of a Blueprint for Social Operations too. They'd better, soon.

I am the entire Agricultural, Mining, Manufacturing, Transportation and Communication Flow Line Sequences of North America, from the Raw Material to the Finished Product.

I am the Technological Processes of Production in every Field of Industry. In these, 'the work is moved past the individual, and the human being employed no longer participates in any part of the process as a contributor of human effort to the actual production, but is only there as an operator to stop and start the technological process and to set up the original standards of operation. A technological process after it is thrown into operation by human instigation, controls all operations, all degrees of accuracy, and all dimensions by the rate of flow of goods and services.'

Technology today is something new under the Sun. It is the integration of Scientific Knowledge into a New Entirety of production of Physical Wealth, together with the social effects and conclusions inherent therein. The Whole forms an overall Process of Social Evolution that is unidirectional and irreversible. It never happened before and it can't happen twice in any one Area. This Social Process projects its own Polity of Control and Administration.

So far I have not been permitted to operate much in the Fields of Education, Public Health, Housing, Social Relations and Distribution in general. These are still mostly the Domain of Superstition, Tradition, Greed,

Shrewdness and Venality. That is why they are in such a Mess all the time.

I, Technology, have solved the Problem of Production. I cannot work at my Peak of Efficiency, however, until the Problem of Distribution is turned over to me also. I can solve it as well. My Past Record and my Present Stage of Development constitutes a Certified Promise to that effect.

It was I, Technology, who organized the Great Industry of North America for War. I could do it just as easily for Peace. I flooded the World with Food and Weapons. I designed a host of New Mechanisms for the fight against fascism. Among my more spectacular achievements were the Precision Bomb Sight, Radar Detection, the Proximity Fuse and the Terrible Atom Bomb. I, Technology, would just as soon turn out Peaceful Goods and Services. It is not I who dictate how I must Operate.

It's Up To You!

I am still imprisoned within the Framework of the Price System. Those who control it manipulate the Stop and Go Lights. I only work there.

If you want me to turn out Abundance, Distribution, Leisure, Equal Opportunity for ALL and Security from Birth to Death, I can do the job. It's up to YOU.

If you would like to see the Degree of my Application brought up to a plane equal with my Stage of Development, it's up to YOU.

If you would like to see the Young Ones, our New Citizens coming into this life, open their eyes on a Land devoid of Beggars, Crooks, Charity,

Chicanery, Chiseling and Profit, it's up to YOU.

If you would like to see your Children growing up in a Land of Equal Opportunity free from discrimination of Race, Creed or Color, it's Up to YOU.

If you would like to see North America inhabited by a race of Stalwart People with Intelligence and Integrity, It's up to YOU.

If you would like to see the Old Folks taken care of Adequately and Humanely before they close their tired eyes to rest forever, It's up to YOU.

If you would like to take out the Biggest Insurance Policy in the world for Yourself and Family and leave a Legacy beyond Price to the Loved Ones you must leave behind when you, too, pass beyond the veil, It's up to YOU.

You cannot have any of these Desires met under the Tyranny and Regimentation of the Price System. It just does not work that way.

In the Field of Social Operations, however, all things are possible to Technology. I will do whatever YOU want me to do.

All YOU have to do is to install Technological Social Controls in accord with the Physical Laws by which I must Operate. I can't do it. It's up to YOU.

If you will set me Free from within the Framework of the Price System, I will build Right Here in North America the Richest and Fairest Civilization the Sun ever shone upon.

It will be the First Human Culture in the sorry history of Man, organized and operated for the Prime Function of LIVING. Would you like that? Well, It's Up to YOU!

I AM TECHNOLOGY!

From Here on Out

Keep Your Eye On The Trends

by R. F. Novalis

Increasing Trends..		All-Time LOW	Latest HIGH Figures*
1. DEBT (U. S. Govt.) per person.....	January 1, 1940 \$0.21		\$1,939.00
2. ENFORCED LEISURE (unemployment.....)	October 1944—630,000		1,830,000
3. MACHINE TOOLS in use** (cumulative total).....	1925.....	700,000	1,800,600
4. BANK LIQUIDITY (percent deposits to reserves, Federal Reserve Banks).....	1921.....	60.0%	98.00%
5. GOVT. (U. S.) BONDS to total bank invest- ments (Federal Reserve Banks).....	1929.....	39.0%	94.00%
6. GOVT. (U. S.) BONDS to total life insurance investments	1915.....	.0005%	60.10%
Decreasing Trends		All-Time HIGH	Latest LOW Figures*
1. PRODUCTION (combined factory-mine-railroad freight) Index basis 1919-20 monthly aver- ages equal 100	Oct.-Nov. 1943—250		187.
2. MAN-HOURS WORKED (total of man-hours in factory-mine-railroad) (Note: 1919-20 month- ly average was 2.54 billion) Actual number.....	Oct.-Nov. 1943 3.14 billion		2.45 billion
3. MAN-HOURS PER UNIT in above industries, combined average	1919-20 = 100		40%
4. ENFORCED SCARCITY (load factor on installed capacity of above industries)	No Figures		22%
5. INTEREST RATES (combined average yield on Govt.-municipal-corporate bonds)	1919-20 6.12%		1.70%
6. OSCILLATION DOWNWARD of factory output since all-time peak (Oct.-Nov. 1943).....			37%

* November-December, 1945

** No figures available on number of machine tools scrapped

Ed. Note: See January-February "Great Lakes Technocrat" for detailed explanation of this table

* Note: Figure on Item 6 of Decreasing Trends in January-February issue Volume 3, No. 8, page 24 should have read 22½ drop instead of 40.

Bet You Didn't Know This

A very clever and extremely useful machine has been on the market for some time and which has not been given proper publicity or credit. The machine takes very little room and is propelled by means of a pedal attachment, by means of which a fulcrum lever converts a vertical reciprocal motion into a circular movement.

The principal part of the machine is a huge disc that revolves in a vertical plane. Power is applied through the axis of the disc and work is done on the periphery, where the hardest steel, by mere contact, may be reduced to any shape.

The machine is called a grindstone.

(*Machinists Monthly Journal*, November 1945.)

There are only 11 steam boilers in the entire world capable of generating 1,000,000 pounds of steam per hour. Each one is as wide as a four-lane highway, as tall as an 8 story building and burns a carload (45 tons) of pulverized coal every hour. One of these units can heat 10,000 average dwellings in the winter time, figured on a basis of 100 lbs. of steam per hour per dwelling. Where are these giant generating plants? In Asia? No! In Africa? No! In Europe? No! In South America? No! They're all right here in the U.S.A. (From an ad by Combustion Engineering in *Fortune*, January 1946.)

Method or Mythology

Spirits of Confusion—Triple Distilled

By Geo. B. Connor, MAL

'Great crises come when great new forces are at work changing fundamental conditions, while powerful institutions and traditions still hold old systems intact. . . . If that is so, then it behooves us by education and will, with intelligent purpose, to criticize and judge even the most established ways of our time, and to put courage and labor into resistance to the current mores where we judge them wrong. It would be a mighty achievement of the science of society if it could lead up to an art of societal administration which should be intelligent, effective, and scientific.'—William Graham Sumner, 1840-1910, Professor of Political and Social Science at Yale University, in his book *FOLEWAYS*, page 118.

They Gave Us A Stone

'I BELIEVE!'

Into what pitfalls and debacles these two innocent appearing words have led the toddling footsteps of humanity. Their dirty work is not yet complete. Even in the halls of science, where their unreliability is most often appreciated, they make their daily contribution to confusion.

Belief is always the easy way out. Belief is the siren, the nymph of nonsense, that lures the unwary off the rough, dynamic seas of thought into the tranquil waters of imagination, then quietly murders mentality under the opiate of deception. It thwarts reason with emotion; it defeats knowledge with preconceived ideas. The widespread employment of belief results in impeded social progress and stymied civilizations.

Babylon and Egypt fell before its onslaught. Greece succumbed to its spell. Rome withered on the vine at its breath. And the darkness of the middle ages spread in filth and squalor under its wings. The British Empire, today, is moldering in its clutch. Nor is this Continent free of its lechery. Belief is the antithesis of knowledge in general, but of *social knowledge* in particular. It stands as the principal barrier be-

tween Americans and an understanding of their social problems.

Belief has misdirected the thinking of men for many centuries. It has gained admittance to his every institution and has obtained control over most of them, except science. To bring this spectre under observation is to tread into the awe-bound precincts of constituted authority. To question belief is to violate the sacred soil of superstition and tradition. Belief now occupies a pedestal of equal stature with any of its predecessors in the mythology of the past. Greek gods and Roman idols were not more inviolable in their day than political government, the Price System, and ecclesiasticism are today.

Sunlight Dissipates Fog

Belief is a dragon that even St. George would hesitate to tackle. It has no vital spot by which it can be dispatched in a trice. To attack belief is to attack simultaneously ten thousand nebulous ghosts. Its very indefiniteness is its greatest strength. It will not battle openly. It preys unmercifully upon sentiment. It perverts the finer aspects of tradition to its own mean and sordid ends. It sets up authority beyond fallibility, and elevates superstition to sanctity and de-

votion. It condemns abundance to the sacrificial altar of Price System profits. It confounds a discussion of social affairs by introducing emotion and prejudice. It persecutes the manifestation of sensible social planning by every distraction available. It is the insidious and undetected enemy of everything American. To cope with this pervasive nonentity requires all the skill and resource that science can command!

By definition, belief is something which is accepted as true upon a statement by others as distinguished from personal knowledge. By definition, therefore, belief is effected by argument or persuasion, in contrast to knowledge, which is effected by the presentation of facts. It is literally so that anyone who believes anything is, *de facto*, letting someone else do his thinking for him. To say 'I believe' is a tacit admission of ignorance; otherwise, the speaker would get the facts and know definitely of his own accord. In minor affairs and unimportant details, belief might possibly be condoned as a harmless pastime. In matters of social importance, it leads straight to social chaos.

He Knows Not That He Knows Not

As belief is the direct result of ignorance, it would seem a simple matter to eliminate it at the source by eliminating ignorance. With candid ignorance, it would indeed be simple, but the problem is more complex than a casual examination would disclose.

Honest ignorance is a rare phenomenon. Ignorance is almost inseparably accompanied by stupidity. When thus accompanied, ignorance acquires an amazing and curious set of characteristics which enables it to practically defy penetration. First of all, it is completely unaware of its own existence. Stupid ignorance cannot conceive of ignorance. It cannot understand,

nor will it indulge in self-examination. It resists attempts at education and will not acquire knowledge of its own volition. It cannot recognize intelligence and, therefore, will not seek to emulate the intelligent. It cannot anticipate the future, nor realize the necessity for design. It is incapable of function beyond the barest limits prescribed by the necessities of its environment. Being the soil in which belief thrives it is a condition which blindly suffers authority and tyranny. It worships power and pomp, is dazzled by ritual and rote, and is, in consequence, the ideal substance upon which Fascism feeds and flourishes. Thus, ignorance creates its own vicious circle—ignorance, to belief, to authority, to ignorance. Around and around she goes and where to stop it, nobody knows.

There is only one effective step we can take to roll back ignorance, curb belief and give knowledge a chance to function properly. That step is to usher in the abundance which technology makes immediately possible on this Continent. This is the only place where such a possibility exists and we must act quickly if we are going to make the most of our opportunity. North America may yet put an end to the absurdity of belief, where factual knowledge is available.

Stay In Your Own Back Yard

To acquire an understanding of society or any of its problems requires first of all, that belief be separated from knowledge, and that a sharp distinction be made between the two thereafter. A brief examination of knowledge discloses that it falls into two classifications: (1) That which is already accumulated and tested and about which nothing further need be done, except to apply it. This includes such things as the postulates of science, the physical laws of the earth; the laws of energy determinants; the nature of

the Price System, etc. etc. (2) That which is partially accumulated and tested, but about which all is not known and consequently about which research is being carried on in pursuit of additional data. This includes atomic energy; methods of education; population and racial problems; biological knowledge, etc. etc. In fact, a very large portion of knowledge falls within this latter classification. That which is absolutely unknown and unknowable cannot be classified as knowledge. Here, and here alone, is the domain over which belief can claim any domination. Beyond this it cannot go.

Nor has belief the privilege of denying investigation into the unknown. Much of the trouble today lies in this direction. Belief is insistent that the unknown remain as such by attempting to prevent it from being made available for exploration. Any serious adherence to such a program would automatically put an end to human advancement. If, in the final analysis, there is nothing unknowable, then belief must entirely cease to exist. That is the inexorable law of intelligence, and cannot be circumvented.

Belief, however, is not content with an attempt at halting further investigation. Belief is exerting a powerful influence to prevent the utilization of knowledge already acquired, particularly in the field of social affairs. It is, therefore, important for Americans to realize that belief is throttling knowledge, the application of which would free them from scarcity and open the gates to actual abundance. *Technocracy* is actively opposed to this sabotage of social knowledge.

Tell A Big Lie

What are some of these fables which have been palmed off on us as gospel truth, and which are causing untold misery, while masquerading as our

benefactors? The first and the biggest fraud is that 'private enterprise' is the best and most effective method of producing and distributing the goods and services necessary to provide a livelihood for Americans. Private enterprise is a belief in the best tradition of the word. It is not a method of doing anything. Production is the result of human and mechanical endeavor, usually, but not necessarily, in combination. Distribution today is the result of price, of money paid *only* for human participation in production or service in the form of wages and salaries. Private enterprise, so-called, is a bastard outgrowth of salary for service. It is promoted on the principle of privilege, or 'right' of an individual or special group to acquire property and gain profit by buying at one price and selling at another.

In the old days, when production was the direct result of toil only the crafty trader, the priest and the feudal baron accumulated wealth. Hand production dictated the conditions. Hand production permitted a small minority, the profiteer, the royalty, and the witch doctor, to capitalize on the efforts of the laboring majority. Then came technology!

Smasher of Shams

Technology is the greatest iconoclast of all times. It has destroyed the concepts of special privilege, not with words, but with deeds. The slave and the attendant institutions of toil became liabilities under the impact of technology. Handicraft production graduated into industrialization, but the methodology of handicraft distribution, the Price System, refused to graduate because by so doing it would have disappeared in company with the system of hand production, under which is developed. The Price System and its methodology rode right along, like a leech, into the new society,

claiming the credit and the glory for every advance made by technology, while simultaneously engaged in hindering advancement. Technology is now at the task of disposing of the Price System.

The status quo, however, is well defended. From ages of practice at the art of legerdemain, the oligarchy of the Price System has successfully created such a state of social confusion and dissension that few men know for a certainty where to place reliance. Some day we are going to 'get wise' to the fact that the *method of production*, and not the rascals who capitalize on it, is the thing which makes America the wonderful place it is in which to live. When we make this discovery, private enterprise will be off to the happy hunting grounds, its only remains an unpleasant memory to those to whom it so bitterly denied the fruit of abundance. Today, however, private enterprise is the god of gods in modern mythology, and legion are its worshippers.

X Marks The Blind Spot

The next great deception in popular practice is that of politics. No one has yet been able accurately to figure out what constitutes politics. It has been defined as the science of government and is upheld as the best of all practices for social administration. If politics is the science of anything, then baboons are beautiful. If politics is the best method of social administration, then war, crime, filth, disease and poverty must be the ultimate goals of our culture. Is any one stupid enough to believe such trash? Indeed, there are millions of Americans who will do battle in defense of this nonsense. The fact of the matter is that if we can survive the conflicts into which the conspiracies of politics will drag us, both at home and abroad, we are going to be exceedingly fortunate. If we

succeed in weathering the putrid practices imposed on society by political referees striving to preserve the status quo, we most certainly can survive any social administration devised by science for the deliberate purpose of furthering the General Welfare of all Americans. Surveying in retrospect a thousand years of political regimes in America and Europe (from whence it was imported), one wonders what it takes to convince the public that politics is rotten to the core and absolutely incapable of efficient and sensible administration. Politics, the great god Bull, plays the role of lackey to the god of gods, private enterprise, in modern mythology. No deal is too dirty or too dastardly for it to put over in the service of its master.

'Render Unto Caesar—'

The last of our monstrous fabrications is ecclesiasticism. By this we do not mean religion. Let's look at the point closer. Religion is a feeling of deep reverence, of faith and belief in a superhuman power that is placeless and timeless. Churches are the social institutions evolved out of that feeling to express that faith and belief. Ecclesiasticism, or clericalism, is the misbegotten behavior of the overlords of the church in general who sabotage religion by engaging in anti-spiritual activities.

Ecclesiasticism meddles with and interferes in affairs of the temporal world with which (by its own declaration) religion can have no concern. Ministering to the spiritual needs of mankind does not license tampering with the physical requirements of individual existence or with the administrative necessities of collective existence. By the same token those who are charged with the operation of the physical and administrative facilities of society have no license to tamper with the spiritual requirements of the

people. The two are separate fields. One is a question of belief. The other is a problem of measurement.

A long suffering humanity is still subject to illicit impositions by ecclesiastics who exercise political and economic control outside of their spiritual domain, in defiance of the tenets of religious faith. The Old World has been cursed with this social ulcer for ages. It is one of the most pernicious characteristics of the Price System. When the New World of America was settled, a new principle was set forth. That was freedom of religion combined with separation of Church and State. Today, religion is not free from economic pressures, and the State is not free from ecclesiastical pressures. Business and politics are increasingly submitting to and endorsing the obnoxious practices of clericalism.

This triple oligarchy is the same unholy alliance which downgraded so many nations and peoples in the past. There is nothing sacred about these clerical saboteurs of humanity. They exploit the sanctity of worship and prostitute the trust reposed in them by men. By conniving with business and politics, clericalism betrays its own body of faith and belief, and the followers who support it and them. Religion is a social necessity for the spiritual side of man. Its function is to imbue him with tranquillity in the face of the hereafter, by adjusting the fearful uncertainties of the unknown to a belief in eternal verities. It has a vast, unconquered field of operations there.

Religion has never yet been free to perform its true function. The money changers have been driven from the temple a thousand times. As long as the Price System lasts, however, they will always manage to find their way back to set up business at the ancient stand. The formation of the Technate of North America will automatically remove both money and the money

changers from the temple, and for the first time in human history religion will be able to fulfill its true function. Not until that time will the religious leaders of this Continent be free to render unto God that which is God's!

Is There A Doctor In Your House?

Technocracy has no place in its activities for belief. The first thing a Technocrat must learn to do is to forget the false information that has been foisted off on him from the day he left the cradle. If he can do this successfully, he is then in a position to begin the acquisition of factual knowledge. In a short time the transformation is complete. A conditioned Technocrat is a new person, mentally if not physically. His conversation and viewpoint are novelties in America, because he refuses to rely on guesswork, and makes decisions only on facts. The membership of Technocracy cannot be misled on social issues, for the simple reason that it employs the scientific method to verify knowledge.

America is in the throes of a mighty gestation. Abundance is being born. If it were not for the witchcraft midwifery of belief, the birth could be a natural and normal delivery. The social quacks are at work with their devilish schemes, and if abundance comes through it alive, the American people will be lucky indeed. Social obstetricians are almost as scarce in America as seaweed on the sahara. Almost, but not quite! There are some who can be made to realize that abundance is the destiny for North America, and that it *must* be delivered. Upon these rests the full responsibility of civilization. It is toward them Technocracy points its address, for they alone can usher in abundance and prevent chaos.

Calling All Citizens

Where are they to be found? Everywhere! In all walks of life, from all

creeds and races, from all groups and strata of society. From the ranks of the whole people of America, as it should be, come the volunteers with the knowledge, the skill, the endurance, the consideration and the patriotism of the New America, a genuine physical democracy. To them a simple statement of fact, which they can verify, means more for social welfare than the most profound nonsense concocted by eminent authorities of press, pulpit, political party, or business office.

To reach these people demands an organization designed for that specific purpose, an organization with the identical characteristics we have enumerated as the requirements for constructive social intelligence. *Technocracy* is the synonym for social intelligence. *Technocracy*, alone, fulfills that demand.

At this writing, the believers of the Price System are beating the drums

for destruction in preparation for a war with Russia. Shylock is out to get his pound of flesh and preserve his system of profits. If we do not determine, as a people, to organize for peace and plenty, we shall *be organized*, by the proponents of the status quo, for death and destruction. These are the *only* alternatives. It's got to be this or that! It's got to be wisdom or war! It's got to be leisure or labor! It's got to be method or mythology! It's got to be *Technocracy* or terror! I'll make mine *Technocracy*. How about YOU?

Note to the reader: If you 'believe' a single idea in this article, you are fooling only yourself. If you suspect that it is correct, or incorrect, but would like to make sure, here is the best thing to do about it. Join *Technocracy Now* and Investigate its program. Do your own thinking!

Outline of the Future

Business Week, June 15, 1946, reports that the Reynolds Metal Company plant at Louisville, Kentucky, received a shipment of over 1,000,000 pounds of aluminum (more than 20 boxcars full) by marine freight from the mill at Listerhill, Alabama. The shipment required four days from Listerhill, up the Tennessee and Ohio Rivers, as against the usual two days by rail. "But the water shipment was much cheaper." You bet! That's why the railroads had their political stooges put the legislative kibosh on America's growing canal system back in grandpappy's day. They couldn't stand the competition. When *Technocracy's* Continental Hydrology System is installed, all heavy freight will move by water. It's the cheapest way from an energy standpoint. There won't be any railroad lobbies around to butt in either. In fact, there won't be any railroad lobbies—period.

Dr. E. G. Kelly, chief entomologist of Kansas State College, carried out a fly eradication test last year in 20 Kansas Counties. 'One part of a herd in each County was sprayed with DDT, while the rest of the herd, just across the fence, on identical pasture, was left untreated. The herds were weighed in May and again at the end of the fly season in October. The treated herds gained an average of 48 pounds an animal, or 32% overall, more than the unprotected herds.' Dr. Kelly estimates that there are often from 3,000 to 5,000 flies plaguing a single animal at one time. In a test of 15 cows in one dairy herd by A. H. Stephenson, county farm agent for Sedgwick County, the results show that after one DDT treatment milk production rose from 50 gallons a day to 60 gallons. (*Wall Street Journal*, August 6, 1946.)

Energy and the Development of Civilization

By Dr. Leslie A. White

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This talk is one of a series being given by American scientists on the New York Philharmonic Symphony program on Sunday afternoons. It was broadcast February 16, 1947. Dr. White is Professor of Anthropology at the University of Michigan.

HUMAN civilization is about one million years old. During this long course of time, civilization has grown from the level of our prehuman ancestors to the status in which we find it today. We know a great deal about the process of development of this civilization. Our knowledge of this development has come mainly from three sources: First, from archeological exploration of extinct civilizations—or of extinct cultures, to use the term preferred by anthropologists; second, from the study of primitive peoples still living in the modern world; and third, from investigations into the nature of man himself. On the basis of this total knowledge we are able to formulate a theory that will explain the growth of civilization thus far, will make clear to us the status of civilization as it exists today, and will, we hope, give us some indication of its probable course in the future.

Man, like all other animals, is engaged in a struggle for existence. This struggle takes place not only between man and his natural habitat, but within the human species itself—between tribes and nations. Civilization, or culture, is the means employed by man to carry on his struggle for survival.

Culture is made up of many things. It includes tools and weapons, customs and institutions, ceremonies and

rituals, art, science, philosophy, religion and so on. An essential feature of culture is its continuity; for a large part of the culture of one generation or age is passed on to the next. Culture is thus a continuous process which grows and develops in accordance with principles of its own. We are able to formulate the laws of this development. *And the basic law relates to energy.* (Italics ours)

All living organisms require energy. In order to maintain their existence, organisms must be able to control and to utilize energy in one form or another. In the human species, culture is the characteristic means of harnessing energy and of putting it to the service of man's needs. By means of tools and weapons, social organization and knowledge, man is able to harness the forces of nature and to put them to work for him. It follows, therefore, that as more and more energy is harnessed, the more highly developed does the culture become. When only a small amount of energy is controlled per capita, the culture will be low; man will be a savage or a barbarian. If, however, the amount of energy harnessed and put to work be great, the culture will be high.

We see therefore that civilization has developed because ways and means have been found from time to time

to increase the amount of energy per capita under man's control and at his disposal for culture building. *This is the fundamental law of the growth of civilization.* (Italics ours)

The first source of energy to be utilized in culture building was the human body. The amount of energy that can be obtained from human bodies is, of course, small. It is equivalent to only about one-tenth horsepower per adult male. When all its members were considered, including infants, the weak, and the aged, the earliest human society had no more than one-twentieth of one horsepower per capita. Naturally the culture, or civilization, built with these meager resources, was exceedingly low and crude. And mankind would have continued to live in this primitive condition indefinitely, had not a way been found to increase his energy resources—to harness and control more energy per capita.

The first really great step in cultural advance was taken when man learned to domesticate animals and to cultivate plants. This happened some twelve to twenty thousand years ago. Plants and animals are, of course, forms of energy—solar energy stored up in cellular form.

And when man harnessed these natural forces through animal husbandry and agriculture—especially agriculture—he greatly increased the energy resources at his disposal for culture building. As a consequence, there was a great increase in population; villages grew into cities, and tribes into nations and empires. More and more people were freed from the labor of food production as agriculture became more efficient and their time and talents were devoted to the arts, crafts, and professions. Architecture, metallurgy, writing, mathematics, astronomy, the fine arts, and philosophy

cialsists. It is significant to note that after hundreds of thousand of years of slow progress in the Old Stone Ages, advanced rapidly in the hands of specivilization leaped forward and progressed rapidly following the introduction of the agricultural arts—in ancient Egypt, Mesopotamia, India, China, and, in the New World, in Mexico, Middle America, and Peru.

The second great step in cultural advance was taken only a century or two ago when solar energy was again harnessed, this time in the form of coal and oil by means of steam and internal combustion engines.

And today we are on the threshold of a third stage of cultural advance; that of harnessing the energy of the nucleus of the atom.

The social systems of mankind are closely related to their underlying technological systems—to the ways in which energy is harnessed and put to work. Thus, a people, who derive their subsistence wholly from hunting and gathering wild plant food, will have one type of social system. A pastoral or an agricultural people will each have another type, and an industrialized people still another type of social system. Social systems are always determined by the amount of energy harnessed per capita, and by the ways in which this energy is expended in gaining a living from nature and in waging offensive and defensive competition with neighboring systems.

The introduction of agriculture brought about a social revolution as well as a technological revolution. It destroyed the clan and tribal system of primitive peoples and instituted civil society with the political state. The recent technological revolution powered by coal and oil has likewise inaugurated a series of great social changes that has not yet run its course. But today we are confronted with this entirely new development:

atomic energy. The age-old struggle to conquer and subdue the forces of nature has at last harnessed a power so great as to become a threat to man's existence, at least as a civilized being.

At the same time, atomic energy offers a promise of peace and abundance in the ages to follow.

The crucial question today is: how will the vast powers of atomic energy be used? This brings us again to the two sides of man's struggle for existence. On the one hand he is struggling with the forces of nature, trying to subdue them and to bend them to his use. On the other hand, he is struggling with his fellow men for the possession of the resources of nature.

It is on this stage that the drama of atomic energy will be enacted. We

are told by physicists that within a decade or so it will lie within the power of warring nations to destroy much, if not most, of the civilized world. If this should take place, civilization will unquestionably regress to earlier and lower levels of development.

But social evolution has moved forward with technological advance in the past and it may do so again.

It is possible that the military use of atomic energy may break down, once and for all, the political barriers that now divide the human race and set man against man—and it is possible that this may be done without crippling civilization. If this should be the outcome, mankind can at least become united in a common purpose and in common endeavor: the Good Life for All!

Consolidate the Rackets

For the third time a great wave of corporate mergers is sweeping through the American Price System economy. Around the turn of the century 200 corporations with billions in capitalization consolidated. During the 1920's the second wave came along. In 1929 alone 1245 companies consolidated. Then came the depression which slowed down the trend. After that came the war which provided the stimulus for the present wave. Since 1940 large corporations have gobbled up 1800 smaller companies. More than one-third of the mergers have taken place in industries which have hitherto been dominated by small enterprises, notably food, textiles and non-electrical machinery. About 60 percent of the mergers have been horizontal, that is, mergers of firms producing similar products. Some 17 percent have been vertical, that is, purchase of suppliers. The first act of political futility against mergers was perpetrated in 1890 in the Sherman Anti-Trust Act. Since then Congress has sweated out 60 other futile laws against

mergers. In releasing the report from which the above data are quoted the Federal Trade Commission stated: 'In our opinion this growing concentration of economic power through mergers is today's greatest challenge to the American theory of competitive enterprise, and to the American way of life. Large corporate consolidations lead inevitably to cartel organizations, in America as well as in Europe. Private supergovernment in industry leads almost inevitably to political super-government.'

'Only one-tenth of 1 percent of the corporations in this country own more than half—or 52 percent—of all corporate assets. In 20 states in this country there are firms so large that the census bureau is not allowed to make public production figures for the entire state since this would be informing the public of what is considered the private business of an individual firm.' (*Chicago Sun*, March 15, 1947.)

Science or Philosophy?

This Time It's Real!

By Maude Bryant, 12247-3

'Most scientists, as well as other intelligent citizens, would agree that the great problems of our time are not those of the control of nature but of the stability and adequacy of the social order . . . To a very substantial and rapidly increasing degree, the actual functioning of our social order is dependent on a social technology which is in fact applied social science . . . The scientific point of view is probably the greatest hope of modern society and if this hope is to be realized, it cannot be confined to one sector of the total field of science.' (Talcott Parsons, Chairman of the Department of Social Relations at Harvard University, in an article in the 'Bulletin of the Atomic Scientists, January, 1947).

Philosophy Is a 'What Is It?'

PHILOSOPHY arises from that never-ending desire of mankind to establish the supremacy of knowledge above the possibility of frustration. That eternal effort to cope with the unknown, that endeavor to establish certainty has not been entirely futile. Out of philosophy, somewhere or other along the line, developed the scientific method, that method which has given mankind a wealth of recorded, organized knowledge, which is Science.

The opinions of scientists on non-scientific subjects are no better than those of the public-at-large, for an opinion remains an opinion no matter who utters it. Scientists, however, have been trained to critically examine beliefs and to discard those beliefs which conflict with fact. At this time it is important that the average man do some thinking about the necessity for following the leadership of men properly trained in the social aspect of science, instead of blindly following the leadership of philosophical confusion and uncertainty.

There is much editorial pessimism that the human race will not see in time the great need for the right kind of leadership in order to realize the abundant life, potentially available in

this Technological Age. Commentators state that it appears we will concentrate a large portion of our science on the art of self-destruction. By following the political greed and economic mismanagement of Price System leadership, some crackpot may touch the wrong button and modern civilization could cease to exist in about one hour, the time it takes a rocket to make a six thousand mile trip.

Some scientists frankly state there are no technical barriers to the complete destruction of our major cities on the North American continent and are agreed that such a war is a definite possibility in about ten years.

Technocrats are agreed that the time is overripe for a major social change. The time has come to abandon the incompetent Price System and undertake to form a scientifically controlled Continental entity, with the preservation and advancement of civilization as its goal.

Let us examine the line of demarcation between the philosophical approach and its Price System leadership; and the scientific social approach of our Continental leadership in a Technate. Out of the compilation of facts, and the application of scientific findings, came Technology, that

vast, integrated productive mechanism.

Except in the method of their work, men of science are no different from any other men. Their hopes, their dreams, their emotions, are common to all men. They differ in insisting that science deal with facts and phenomena which are subject to experimental verification. They are part of a group of highly trained, clear thinking people, and include engineers, technicians, etc. Some scientists try to keep their thinking on metaphysics, religion, politics and philosophy separate from their science. Many do not. Such things are matters of opinion and belief and are not subject to the experimental method used in their workaday world.

Science Is a Method

Science is knowledge systematized. It deals with verifiable facts. It is a method of inquiry, investigating the nature and properties of material bodies and natural phenomena. Social science is an investigation into the physical aspects of social life. There is only one social science. It is called Technocracy. Technocracy invites all to investigate its program, its verifiable facts, its blueprints for social change.

For generations we Americans have strolled along philisophy's path. Suddenly, this has widened into a scientific highway, leading us halfway across the bridge of technological achievement. Before us we find stretched a barrier, a ribbon as it were, effectively serving to separate us from the realization of the heritage we can plainly see beyond that ribbon barrier. Clinging to the incompetent Price System, having its foundations in philisophy, we refuse to break the ribbon barrier, for to go on we must use the necessary exactness of science in the social field.

The line of demarcation is clear:

Philosphy is the dream; Science is the fulfillment. Between them lies the antiquated Price System, a barrier to our future.

Venturing a look backward, we see that the progression of centuries has swept away the highway of philosophical concepts on which we have been traveling. Whether we like it or not, we face a technological future. Technology has propelled us into the future. We find we have arrived at a bewildering state of social confusion, which permits no retrogression, no going back over the philosophical approach.

Urging us to cut this flimsy barrier and to cross forward into abundance is Technocracy. The moment we cut the ribbon, we may move as a united people into the NEW AMERICA.

Let us take a look beyond the ribbon and we see visions; they are physical; they are measurable; they are verifiable and they are tangible. Accepting Technocracy's invitation to cut the ribbon and follow the leadership of Science, we can investigate the other end of this bridge. We cross over and find that the roadway which Technocracy points out leads away in an upward trend toward still more staggering achievements of Science.

We'll find ourselves in a new age, in which machines and devices do the precision work required by society. Men and women will touch levers, buttons, etc., but their labor lies in knowing when, where, how and what to touch. The results will be sure, accurate, vast. We are now in an age where technology does in rhythmic precision what men and women have dreamed of doing for thousands of years. We are spellbound and incredulous, for this new way of life has developed so swiftly that we have scarcely seen its approach. We pinch ourselves to see if we are still dreaming.

The current of extraneous energy which has swept our production to heights hitherto only dreamed of by philosophy, overwhelms our ancient Price System mechanism of distribution. Our political and business leadership, frightened by this economic bogey, are picayunishly seeking to strengthen the barrier which holds us back.

Visualize Technocracy as a streamlined vehicle, providing transportation to North America's future Technate. If we have the good sense to step aboard and let the operator with the 'know-how' steer our speedy vehicle safely to where knowledge can function without being flagged down by monetary influence, we will arrive safely. Let us have courage to follow Science, and the method that has provided the technology with which we are surrounded.

We are being forced by the urgency of events to give heed to political inadequacy. We are agreed that the time is over-ripe for social change,

if mankind is to survive. We find that the way of politics, born of philosophical concepts, does not conform to scientific ethics or technological procedure. Their ideological processes are not in conformity with the General Welfare as a whole.

Regardless of all arguments to the contrary, we, as a people, are approaching the necessity of making a decision very soon. It is plain to see that energy, the prime mover behind us, like a great flow of lava, cannot be stopped by the human will. We are being herded, reluctantly but willy-nilly, across this imposing bridge, which Science and Technology have created. We are now at the dawn of an era where mortal man, except in dreams, has never before dared to venture.

This time it's real! We urge all Americans to join Technocracy. Help to put the social aspect of Science into operation. You have a new world to gain and, except for an old world that is already dying, you have nothing to lose!



'This Little Pig Went to Market'

'What have you gentlemen done with my child? He was conceived as a potent instrumentality for culture, fine music, the uplifting of America's mass intelligence. You have debased this child, you have sent him out on the streets in rags of ragtime, tatters of jive and boogie woogie, to collect money from all and sundry for hubba, hubba and audio jitterbug. You have made of him a laughing stock to intelligence, surely a stench in the nostrils of the gods of the ionosphere; you have cut time into tiny cublets, called spots (*more rightly stains*), where-with the occasional fine program is periodically smeared with impudent insistence to buy or try.

'Murder mysteries rule the waves by night and children are rendered psychopathic by your bed time stories. This child of mine, now 30 years in age, has been resolutely kept to the average intelligence of 13 years. Its national intelligence is maintained moronic, as though you and your sponsors believe the majority of listeners have only moronic minds. Nay, the curse of his commercials has grown consistently more cursed, year by year . . . '

(Extracts from a letter by Lee DeForest, inventor of the three element audion tube, the first grid radio tube, that made modern radio possible, in *Radio-Craft*, March, 1947.)

ping leaky roofs. Beef boullion superseded gold bullion. (Ah, the proper biologic chronology was shaping up.) Law books and texts on philosophy were found to be poor building blocks. And, of course, the platforms of political promises couldn't even provide good kindling wood, much less support anything.

Misery loves company, so the saying goes, but not in this instance. The Money Changers and Medicine Men fled from the company of the Politicians. (It sure is tough when there is no audience.) The Money Changers had nothing to sell, and nobody to fleece. From force of habit a goodly number of them spent their time counting their useless debt tokens. The more sardonic type amused them-

selves by throwing hard money at the stone statues.

The element known as hard-headed business men had the opportunity to make use of their peculiar talent. They hiked back to the mountains in the hope of bringing forth the Real Thinkers. Time and again they charged the mountain, a la billy goat, but it stood fast, and brought forth nothing. The Medicine Men simply had nothing to do, and wandered in and out among the stone statues with a vacant stare. Some of the more talented were observed counting the number of statues. In the meantime, the only intelligent utterance came from a Politician, who immortalized himself by saying, 'Brother, this is really Hell!'

Pass the Murphies, Please

Before the war the average consumption of potatoes was 131 pounds per capita. During the year ended June 30, 1946 this dropped to 127 pounds per capita. The potato crop in 1946 was a whopper, about 500,000,000 bushels. There was a 100,000,000 bushel 'surplus.' Every device in the book was used to get rid of the 'surplus,' including dumping out on the ground to rot. One might ask why the sanctified 'law of supply and demand' didn't operate in this case and lower the price of potatoes. If it had been allowed to operate just a teeny weeny bit so as to raise the per capita consumption by 4 pounds to get it back to the prewar level that would have consumed 568,000,000 pounds of potatoes. That would have made an awful hole in the 'surplus.' But, no, that's not how the Price System operates these days. The government now supports the price. It paid \$2.20 a hundred pounds for the 100,000,000 bushel 'surplus' so that John Farmer would not suffer economic loss. Recently the agricultural department offered to sell 'sur-

plus' potatoes for commercial export at 5c per hundred pounds. So far, it has managed to get rid of only 5,000,000 bushels. The prospects are for a bumper crop again in 1947. If conditions are favorable there will also be a bumper crop in 1948. Reason? The Steagall amendment which guarantees 90 percent of parity price to farmers runs until December 31, 1948. John Farmer will never pass up a good thing like that.

'The problem of commodity surpluses again is confronting the world. Some are already here. Others are on the horizon. They are already giving serious concern to government planners in many countries. Reason for this concern is that, in the past surpluses of such major commodities as wheat, wool and rubber have led to unemployment and financial disaster for millions of people in many countries. Crude attempts to prevent such surpluses have sometimes led to monopoly, high prices and trade restrictions.' (World Report, May 13, 1947.)

Old Concepts or New Designs

Hitch Your Wagon to a Rising Star

By F. C. Glenn, R.D. 8931

'How free are we today—from war, pestilence, earthquake, volcano, fire, sickness, idiocy, imbecility, pauperism, crime, squalor, shipwreck, stupidity, ignorance, superstition, famine, disease; from accidents of mines, factories, railroads, automobiles and airplanes; from harsh sounds, bad air, and foul odors; from scorn, malice and intolerance; from vested interests and established opinion in church, school, and government in home, society and nation; from clocks, timetables and calendars; from the decrees of fashion, the convictions of the mob, the mandates of the politicians? In short, how free are we of the ox goad and the treadmill? . . .

'Why is man not as free as he might be? Because his mind is made up; his pride of opinion outweighs his desire to know; he dismisses realities with a "God's in His Heaven—All's right with the world," and neglects the first lesson he ever learned—which is, that he can learn. Because he refuses the dare thrown to him by nature herself: Know thyself; and refuses to heed the warning written across every page of history and strewn across the face of the earth itself: . . .

'The human being that can learn no more has parted with the only priceless possession in human inheritance. The men, women, or nations that harden in their mold, get set in their ways, crystallize their opinions and beliefs, and swear by and live according to their routine habits—such men, women or nations are old; senile decay is at hand.' (George A. Dorsey, anthropologist, in his book 'Why We Behave Like Human Beings.')

Low Road or High Road?

In this viciously competitive Price System, which has developed crime, debt, malnutrition, insecurity, poverty, ignorance, and internal strife, the factors which in the end reap disintegration, there is a fundamental battle between hand tool scarcity and machine tool mass production; between the science of today and the obsolescent concepts of the dead past; between the change of tomorrow and the status quo of yesterday. To survive in tomorrow's change man must learn to think in broad new terms, by measurements hitherto beyond the reach of his conceptions.

Where man finds no answer, he will find fear. Where he finds no answer, he becomes an escapist, running from the figments of his own brain, afraid of the synthetic fears concocted

in his own imagination. He shirks his responsibilities, travels the way of senseless vagaries of emotional stupidity, arrives at a dead end and finds no way out.

Traveling the way they feel about things, such emotionally misdirected individuals feel insecure and are not well adjusted to life. Such persons fear and hate most readily and try to offset their fears with hopes, arguments, rhetoric and fancy ornamentation. Fear, hate, and hopes are the ingredients for the sterility of defeat and have the qualities for breeding suspicion, perplexity, and mistrust. It is here that man should halt, giving himself the severest scrutiny, and endeavor to remove his own greatest obstacle in achieving the answer.

After removing the emotional approach, mental hazards, the self sufficiency of egotism, false claims, and

false criterions, along with the sublimation of self adulation, the answer can be found through accurate observations, precision measurements, and scientific investigation. It cannot be found according to this wish or that wish! It does not operate this way or that way because the way we feel induces us to want it that way, but because the job to be done determines the way it must be done. When things are brought together in proper relationship, the principle automatically attaches itself.

Let the Facts Decide

Recognition of the facts, and awareness of facts alone, makes it possible to arrive at the answer. Any moronic approach leads to confusion and futility. There must be harmonious conformity in the requirements of the job, for the measurements brook no opposition. The answer is exact, inflexible, adamant, and lies in the physical relationships. The changelessness of physical laws dictate that principle shall constructively reside where the relations are harmonious. The same laws decree that principle destructively rebels and shall not serve incorrect relationships.

The accomplishments of the scientist and all human progress, in addition, depend upon accurate measurements, correct calculation, directed effort, and his ability to understand and

measure the forces and materials he is dealing with. When he has learned what to expect from his observations of previous performances and inherent characteristics of the forces and materials, then he is ready to proceed; and from there on out, he can predict with reasonable certainty what these forces and materials will do under certain conditions.

All disputes recede into the background where the answer automatically exhibits itself in the agreements among investigations conducted by men. The wishful thinking individual may well consider that it is only the moron who will accept dictation from another moron, the end product being futility. Whatever our future is to become, it must proceed from what we have here and now, not what we wish we had. You may cry back to nature all you please, but the scientist answers 'forward to laboratory and the machine,' the way to security and abundance for all.

Technocracy has the knowledge, the organization, the Continental design. The rest is up to you—the American people!

Have you the capacity and the courage?

Nature says 'Know thyself.' Technocracy supplements by saying 'Know Your America!'

Investigate the Facts! And Join Technocracy Now!

Off With the Old Love

'Evolution of our civilization has only progressed by constantly discarding the old for the new, no matter how temporarily painful or injurious to the existing generation. The overall welfare of society must always transcend that of fragmentary groups, and it would hasten

the world's progress if each generation would consider the welfare of those to follow.' (A. B. Sparboe, President Overseas Division, Pillsbury Mills, Inc., in a talk before the Chicago World Trade Conference, February 17, 1947.) As quoted in *Commerce* magazine, March, 1947.

Footprints in the Sand

Report On A Celestial Interview

By Bill Raby, 8741-1

All quoted material in the following interview is direct quotation from published material of the two persons involved.

The crinkly-eyed man with the sloppy brown VanDyke beard perched easily on the cloud. The sheaf of paper in his hand was blank, and his pencil was sharp. But he didn't doodle. He just sat quietly, patiently watching the shadowy outline of a door which hung motionless in the otherwise empty sky.

Gradually, a shape formed in the doorway. At first, it was only a vaporous hint. The bearded man on the cloud pushed back the stringy hair which persistently fell over his eyes, and peered interestedly as the shape in the doorway took substance.

Tall, and looking even taller because of his thinness, the slightly slumped figure in the doorway weakly smiled. Wispy white hair, and skin of almost parchment texture, told of having lived to great age, while the well-fitting brown business suit spoke of a properous life.

The man on the cloud stroked his bushy moustache, and spoke words—comforting words, spoken slowly, painstakingly, with a steady tempo accentuating the slight Scandinavian drawl. He said that Henry Ford had been a great man, an admirable man, and he was welcome to this place, this one stage in a longer journey. Then he rubbed his lightly flattened nose with the side of the pencil, and with a half-visible cynical smile asked if Henry Ford would say a few words

on what he thought of the world he had just left—just a few words for the Eternal Record.

Though he slumped where he stood, when the thin man in the doorway spoke, his voice was incisive. 'We are in the great age of transition from the drudgery of life to the enjoyment of life.'

The man on the cloud derisively smiled. As he scratched words onto the paper, he slowly muttered: 'The democratic nations have taken over in bulk the whole job-lot of vested interests and divine rights that have made the monarch of the old order an unfailing source of outrage and desolation. The same items will foot up to the same sum.'

The thin man nodded disagreement. 'Today we already have enough tested ideas which, put into practice, would take the world out of its sloughs and banish poverty. The economic basis of prosperity is always present. But men must be led into prosperity.'

The man on the cloud smiled tolerantly. As he wrote, he seemed to weigh the words of the other. 'Men led into prosperity? In the last analysis it is the frame of mind of the common man that makes the foundation of society in the modern world.'

The man in the doorway hesitated, as if unsure of his next words or unwilling to say them. 'Labor works along under any system,' he finally said reluctantly. 'But industry must have generalship—and of a high order. Most of the so-called "economic" problems would be completely solved if industries were managed by men who know industry.'

The man on the cloud nodded agreement. As his sharp pencil raced across the page, he observed: 'Under ordinary conditions of businesslike management, production is one-fourth of the industrial community's productive capacity.'

The figure in the doorway sadly agreed. 'A business cannot serve both the public and the money power,' he added. 'Money is not business. Money has nothing to do with the quality of the article which is manufactured, nothing to do with the output. Industry is not money—it is made up of ideas, labor, and management, and the natural expression of these is not dividends, but utility, quality, and availability.'

The man on the cloud smiled too gently. 'Under corporate management it rarely happens that production is pushed to the limit of capacity,' he reminded again.

Henry Ford straightened, and his face took on a deep sternness. 'Industry exists to make things that people use.'

The man on the cloud chuckled. 'The business men have always turned the technologists and their knowledge to account only so far as would serve their own commercial profit, not to the extent of their ability; or to the limit set by the material circumstances; or by the needs of the country.'

Henry Ford nodded reluctant agreement. 'The real meaning of power and machinery is that it was brought into this world to free man, not to enslave him. There is a new morality. Morality is doing the sound thing in the best way.'

While he continued writing, the man on the cloud mused aloud: 'With the continued growth of specialization the experts have necessarily had more and more to say in the affairs of in-

dustry; but always their findings as to what work is to be done and what ways and means are to be employed in production have had to wait on the findings of the business managers as to what will be expedient for commercial gain.'

Eagerly again, Henry Ford spoke: 'The old idea of business, that it consists of one man getting the better of another man, is no longer acknowledged as businesslike even by those who practice it. A great modern industry progresses by the unified thought and energy of many men. Theirs is a cooperation based on common interest in the job to be done.' As if the exertion of speaking had tired him, he slumped against the doorway. His wispy white hair shifted gently as he dazedly shook his head.

The bearded man on the cloud laid his notepaper down. 'A great modern industry progresses by the unified thought and energy of many men,' he repeated approvingly. 'If the country's productive industry were completely organized as a systematic whole, and were then managed by competent technicians with an eye single to maximum production; the resulting output of goods and services would doubtless exceed the current output by several hundred per cent.'

Slumped in the doorway, Henry Ford started to fade, to pass further on into the nothingness of eternity. 'The old tricks have failed,' he sadly admitted. 'The old wisdom has proved foolishness. The old motives are ineffective. When the function of any industry is to produce dividends rather than goods for use, the emphasis is fundamentally wrong.' Practically one with the transparency of the empty sky, his voice sounded hollowly from the now empty space in the doorway: 'Engineering science is the enemy of shortsighted finance.'

The figure on the cloud slowly

tucked his note paper into the pocket of his grey suit. As it completing the train of thought, he drawled mumbly, in that Scandinavian mutter of his: 'The technology requires the use of trained and instructed workmen, and a corps of highly trained and specially gifted experts. Born, bred, and trained at the cost of the community at large, they draw their special requisite knowledge from the community's joint stock of accumulated experience.' He paused, and returned the pencil to his vest pocket. 'The material welfare of the community is unreservedly bound up with the due working of this industrial system, and therefore with its unreserved control by the engineers, who alone are competent to manage it. To do their work as it should be done these men of the industrial general staff must have a free hand, unhampered by commercial considerations and reservations; for the production of the goods and services needed by the community they neither need nor are they

in any degree benefited by any supervision or interference from the side of the owners.'

Then Thorstein Veblen strolled slowly through space to the doorway hanging motionless in the emptiness. The man who Henry Wallace said 'more than any other economist in his day saw the inevitability of many of the things that are now happening . . . (and . . . planted many seeds which will inevitably have a profound effect on the future of the nation' strolled through the open doorway, He, of whom Ernest Sutherland Bates said, 'out of an entire generation of political and economic thinkers, he alone produced a body of thought that lives on,' faded into nothingness.

Thorsten Veblen, former editor (albeit of an economic journal), had an interview to write up. Henry Ford had been an important man, and his measured opinions would be of great interest to the celestial audience.

Operation Americana

Senator Albert W. Hawkes (Rep. N. J.) recently pointed out in a talk in the U. S. Senate that a handful of people have controlled the U. S. Government all down through its history. The nation was established 171 years ago. The population is now 142,000,000. During the intervening years since 1776 other millions have lived and died. The percentage of this vast host that have controlled the Federal government has been infinitesimal.

There have been about 10,000 representatives in Congress, 8,500 in the House, and about 1,500 in the Senate. There have been 32 Presidents, 70 justices of the Supreme Court and only 12 Chief Justices. Said Senator Hawkes: 'The astounding figures I have quoted

should impress us with the responsibility that rests on our shoulders.' (*Labor*, April 26, 1947.)

'I have figured out that, judging from the amount of furniture brought over in the Mayflower, the boat was slightly more than five miles long.' (W. C. Fields in the *American Freeman*, January, 1947.)

'In the early history of the world it was thought to be flat, then it was found to be round, but now we'll be darned if it isn't crooked.' (*Progressive World*, March, 1947.)

When You Come Back

G.I. Joe, The Business Man

By Pvt. Clyde Wilson

(Reprinted from *Technocratic America*, November 1945)

A Peanut Stand And A Whistle

G. I. JOE is going into business. Why not? Success is his for the asking. All he has to do is get a government loan, work hard, and the rest will take care of itself. At least the line is something like this: 'Yes, Joe, you are to be your own boss. What more could you ask for?'

Of course, it will take some time before Joe will build his pencil or apple business into, say, Fords, General Motors, or General Electric. Maybe Joe is not shooting for the stars. A spot on the corner of Main Street would do. 'Joe, you are just the new blood needed to build the up-and-coming town into a metropolis.' Success is Joe's just for filling out the papers for a loan provided to him under the G.I. Bill of Rights.

But just a minute, Joe, don't you smell a rat somewhere? Yes, you fought and gave your all while pressure groups at home fought for a p-i-e-c-e of the profits, with services from none. Sure, you are entitled to the best. These same pressure groups are willing to give you something (for nothing?) after your discharge, while before and during the war they couldn't give their all for the war effort, as you did. These pressure groups have always put vested interest first; they care not for you nor a positive transition into peace. Now, these interests make claims on you. You are their friend in need. 'What a load you have been carrying, Joe.'

Maybe we got off the subject, Joe, and maybe not. Let's get back to this loan, if you are still interested. In brief, the government will allow you

\$2,000, or fifty percent of the total amount. This debt must be used to purchase a home, business property, a farm or farm equipment. You must show that you have the ability and experience, in an endeavor which promises (can you see it?) success. The debt creators can't lose, or can they? They even have a word for you, Joe. It goes like this: 'We greet you—you have been a success over there—in this time you have lost your value—to show you our hearts are in the right place, we are going to watch over you, to see that you get off on the right track—we are your friends.' It's three cheers for them, Joe, not for you; if cheers mean anything.

Before you make the high dive, Joe, let us consider a few facts. It takes about ten to twelve thousand dollars to get started in a modern up-to-date, small business. This investment in no way assures you of a profitable business. You must create debt faster than the next fellow or you will soon go out of business. And going out of business is just what is happening.

There's Always Room at the Top

The facts regarding business trends are:

1. Business was in either have a war or die situation before the war. With its lend-lease, the war gave business enterprise artificial respiration. Business has no way to go, now that the war is over and 'conversion' is on the way. An epidemic has started, Joe, and it isn't a good omen for any G.I. going into business.

2. Places of business are becoming fewer, and smaller in space; while pro-

today THE most important factor of the means whereby modern man lives.

I am the application of the Golden Rule and business 'ethics' simultaneously.

I am the solution of America's problem of abundance, by Russia's method of solving a problem of scarcity. I am Europe solving American economic problems, or vice versa. I am that corny solution to America's problem of abundance, 'Buckle up your belt and go back to 1880.'

I am peace, by violence.

I am a cargo of gold on an unprovisioned ship a thousand miles from land; no sails, food or fresh water, only a full crew of men. There, I am puerile as well as futile.

I am the end of the tether of opinionated wishful thinking.

I am sly. I keep man in misery; he woos me, loves me and wins me; then pities and excuses himself and hates me because I give him what he asked for. This goes on perpetually; poor me, I am so misunderstood.

I retard all progress, as my social status is equal to that of complete stagnation. Oh, yes, I have even been on sprees with 'retrogression' IN AN EMERGENCY.

I slyly entice both the informed and uninformed with countless opinions by

my seeming obscurity, and I howl with delight when I perceive clarity so often deliberately made opaque by an ulterior implication. This, of course, serves both the ignorant and the stupid, and still I gull them all.

The fact is, gullibility is my meat, I thrive on it. I devour it and belch back the masticated and now putrid mess of opinions in the faces of my prey; the embodiment of nothingness, futility.

(Sotto voce): I don't like these engineers and scientists. They high-hat me, every time I make advances toward them, and sabotage all my efforts to slow them down. They lack entirely that serene and cocksure mien so admirable in politicians. I always loved that masterly attitude of Government executives, as though they were chanting: 'I don't know what I'm doing, but I do it anyway.' Yes, I'll stick by those boys; I don't approve of the silly engineering viewpoint of never trying to do what you know can't be done. 'Obvious' is just an excuse for laziness. Everything should be tried once, even suicide. The unerring righteousness of being entitled to your own opinion, or that of one you have adopted is the Mandate of . . .

Yours truly,
FUTILITY.

Birds of a Feather

'The cultural retrogression of the Middle Ages in Europe, which made the situation prevailing in many medieval communities approximate in some respects that of primitive societies, was not conducive to innovation, least of all in the field of Technology. The hierarchic social stratification that was sanctioned as divinely ordained by the Church, which spiritualized poverty and denounced materialism and experimentation, created an economic setting and authoritarian attitudes fatal to scientific progress and technological

change.'—*Technological Trends and National Policy*, page 62, a report of the National Resources Committee, 1937.

'Bankers regard research as most dangerous and a thing that makes banking hazardous, due to the rapid changes it brings about in industry.—Charles F. Kettering, vice president and director of research of General Motors Corporation in an address before the Association of National Advertisers in Detroit, May 9, 1927.

I Am Futility

By Roger Elgood

I AM the manifold results of frustrated attempts to accomplish the physically impossible, in spite of the aid of ignorance, faith, hope, crass stupidity and the supernatural.

I am the end product of APPLIED ignorance.

I am all and every attempt to distribute abundance with a Price.

I am indispensable to the act of attempting to defy a physical law.

I am all decisions arrived at as a matter of opinion, which could be determined as a matter of fact. I am political promises. I am the resultant arrived at by suppressing the facts and lauding the false.

I am organized labor pursuing jobs that do not exist. I am a war hero remaining a hero when he demands a decent living and there is no job available. It is difficult to be a bum and a hero at one and the same time. I am the probability of Charity alleviating the need for charity in the slightest degree. The tendency is always toward perpetuating the need. I am individual independence, which died when the Power Age was born.

I am the hope of eliminating the neurotic tendencies of society in a neurotic social system (by leaving the mosquitoes their breeding ground, we do not stamp out yellow fever).

I am physical and mental wellbeing by denying the means to both, in spite of the availability of these means. In other words, I am the arrival of a physically and mentally superior man by dysgenic methods.

I am business, big or little, producing anything which cannot be sold at a profit. I am the small farmer and the man who is going into business for himself after the war. I am export

trade and foreign markets after the war.

I am a high standard of living on this Continent by the Price System method of exchanging the goods and services which actually constitute the standard of living. In the face of less and less man-hours, I am a higher standard of living, now hostile destruction has ceased.

I am modern business discarding the process of 'a conscientious withdrawal effort' when markets become flooded. I am the sale of any specific abundance to a consumer population with the capacity to use, but without the price. I am a 'price' on the air we breath.

I am our 'immutable rules of conduct, enforced under progressively changing conditions, logically resulting in anything but a muddle.' (Thorstein Veblen)

I am the physical and mental impossibility of ever stamping out or changing in any Price System those behaviour patterns known as the 'main chance' or 'looking out for number one.' Veblen's terse explanation of these traits is unique. He states: 'By steady habituation, cupidity and sharp practice have been embedded in the common sense of the people as *civic virtues* of the first order, under the decent camouflage of thrift and self-help.'

Yes, I am self-help, by chicanery and subterfuge, resulting in the four freedoms and business as usual at one and the same time. I am the approach to approximate truth (scientific fact) in the business of life from any point of view but the scientific; also I am any compromise with 'the determination of the next most probable result' in that vast field of research which is

if a new book got a kiss of death from a New York reviewer, it was a dead duck. If it got a good notice, the publishers turned handsprings. They don't give a hoot what kind of a notice it gets anywhere else, good, bad or anything else. They publish their novels with an eye to the New York trade, and the rest of the country can just as well lump it.'

This reporter was now calculating the distance to the front door.

Chicago On The Pan

'And what about music?' the soldier roared anew. 'I've been in Chicago about eight months now, and every concert here is booked into Chicago by New York booking agents whose first cousins work the Hollywood end of the racket, and to get a play a Chicago manager has to go on his knees to the New York producers. As for opera, the blue-bloods here won't support anything unless it's got the blessings of the Metropolitan Opera Company moguls, while Mrs. Van Astor or what-the-ever her name is, works the yokels over the radio for the cold cash to keep the joint operating.'

This reporter was definitely making plans to run for it, when the soldier leaned over and grabbed his coat lapel. 'And finally,' he practically shouted, 'what about the newspapers all over the country filled with gush

about what Mrs. Renssalaer said to Mr. Goldblitz at the Stork Club and who bashed who at the El Morocco? What is that nonsense doing in local newspapers? Isn't it the same stuff that's peddled through every other channel of communication?'

This reporter wiped his forehead, anxiously awaiting the next outburst, but apparently the soldier had shot his bolt. He sat there breathing heavily, staring ahead, daring anyone within earshot to object to a single word. Finally, to close the interview, the soldier was asked his name and address.

'James Peary,' he said, 'from New York City.'

'New York City!'

'Yes,' replied the soldier. 'I never lived away from home before I joined the Army and got to traveling with the quartermaster corps, but by golly, I sure learned to hate New York once I found what it did to the rest of the country.'

'Want to say anything about Roosevelt vs. Wilkie or Dewey?' asked this reporter, rising.

'They're all New Yorkers, aren't they?' the soldier roared in reply, his face reddening again. 'And what's more. . .'

By that time this newspaperman was hotfooting it down the street, headed for a drugstore and a seltzer to relax the taut nerves.

Way Behind Schedule

A 'very large XB-35 "flying wing" now under construction at the company's plant at Hawthorne, California, can be adapted as a transport plane.' (La Motte T. Cohn, Chairman, Northrup Aircraft Inc. in *Wall Street Journal*, September 12, 1945).

'At the present time our technology has outgrown our social system; the great forces of the Power Age are straining within the confines of institutions that were fashioned in stage coach days.'—Leslie A. White, Professor of Anthropology at the University of Michigan.

Gullible's Travels

Tell Me A Funny Story, Daddy

By The Peripatetic Technocrat

Based on a story in the February, 1946, issue of *The Technogram*, 12245-1 by Archie Sinclair and Joan Forbish.

'My little friend Grildrig, you have made a most admirable panegyric upon your country; you have clearly proved that ignorance, idleness, and vice are the proper ingredients for qualifying a legislator; that laws are best explained, interpreted, and applied by those whose interests and abilities lie in perverting, confounding, and eluding them.

'I observe among you some lines of an institution which, in its original, might have been tolerable, but these half erased, and the rest wholly blurred and blotted by corruptions . . . As for yourself, who have spent the greatest part of your life in travelling, I am well disposed to hope you may hitherto have escaped many vices of your country.

'But by what I have gathered from your own relation, and the answers I have with much pains wringed and extorted from you, I cannot but conclude the bulk of your natives to be the most pernicious race of little odious vermin that Nature ever suffered to crawl upon the surface of the earth.' (The King of Brobdingnag in "Gulliver's Travels," written by Jonathan Swift in 1728.)

Stop Me If You've Heard This One

Once upon a time there was a mighty Nimrod. He was famed far and wide as the greatest elephant hunter of them all. He brought 'em back alive and he brought 'em back in bunches.

This Nimrod of nimrods was a lone wolf. Not for him was the grand safari with carriers, gunbearers and a lot of equipment. He hunted alone.

Strange to relate his only weapons were a large blackboard, a piece of chalk, an opera glass, a pair of small tweezers and a couple of empty, quart size, Mason jars. For years he refused to reveal the secret of his great success. Finally, when he came to his death bed he relented and told the following story.

I set the blackboard up in an open space where all the elephants can see it. Then I take the chalk and write in big figures $2+2=5$. Then I hide in the bush. Pretty soon an inquisitive elephant comes around to see what's going on. He

looks at the figures, scratches his floppy ears with his long trunk and then calls some of his pals over to have a look.

They read the figures and start laughing. Pretty soon they're rolling on the ground in uncontrollable fits, each one trying to keep his two sides from splitting with laughter. That's the point where I come in.

You see, nature equipped each elephant with only one trunk. When they get so tickled over my phony arithmetic that they have to try to hold their both sides at the same time with one trunk they're at my mercy. My next step is to take the opera glass, reverse it and look at the elephants through the small end. I adjust the focus until they're as tiny as baby field mice. Then I pick them up with the tweezers and put them into jars. That's all there is to it.

'There Are More Things—Horatio'

Holy jumping smokes! Why didn't we think of that? Wait till N.A.M. hears about this. They'll do nip-ups all over Wall Street. Here is the an-

swer to our postwar headaches. It may even be the solution to all our social problems. All we have to do is look at them through the small end of the glass until they become tiny enough to handle with our contemporary political and financial Rules of Operation. Then we've got the situation licked.

No more of this scientific nonsense of trying to get a correct measure of the growing magnitude and complexity of our social maladjustments. No more surveys, polls or congressional investigations. They only furnish ammunition for those 'damn reds.' That stuff is all obsolete now. We have a magical new formula.

We'll just lean back and look at our social mess through the reducing end of the glass. Then we'll wait and wait and wait. After all, didn't Fabius Maximus (the Delayer) win great victories against the Carthaginians by raising procrastination to the status of an art? Didn't Abe Linclon stall off many a pestiferous job hunter with a funny story? Didn't the good old U.S.A. procrastinate itself back to 'normalcy' once before with the Ohio gang? That was a bang, bang, bang that was heard from Teapot Dome to the remotest corner of the fatherland. Didn't we keep procrastinatingly cool with Coolidge for four years? Finally, didn't we get a procrastinated chicken-in-every-pot (almost) with Hoover? And didn't we almost lose the pot later? Ooops! That last sentence just slipped out. But, if you remember, there wasn't much procrastination about the way we didn't get two chickens in every pot and a couple of tin lizzies to boot in every garage.

Still, it wouldn't be fair to blame that debacle on the 'Great Engineer.' It was those 'damn reds.' Yes, the more we think of it, the more we like this new idea. Let's reduce our

social problems to a size that our pigmy politicians can handle. Let's appease everybody and stall for time. Those pressure groups that we can't appease, we can always bribe. Ooops! There it goes again. We mean subsidize. If any damn fool Quixotes start demanding social action in Congress, by Gad, Sir, we'll filibuster them to death. Political democracy is history's greatest device for social procrastination.

'Damn The Torpedoes, Go Ahead'

Come to think of it, the filibuster is in line with our best traditions. After all, haven't we always filibustered against our social problems instead of solving them? The two-legged ones we filibustered into poorhouses, penitentiaries and insane asylums. The economic and resource problems we got rid of by giving the country away to foreigners. We called it 'foreign trade.' We gave them the money and they traded it back to us for our resources. It is written that it is more blessed to give than to receive.

What's to prevent us from turning the rest of America over to foreign powers? Then there wouldn't be any more economic and resource problems. We could equalize and stabilize scarcity everywhere. But, there wouldn't be any more country left either. Ooops! That's the third time. Darn it! There must be some devil of contrariness haunting this inquiry. Umm! Let's See! No, it can't be that. Yes, it is! By golly, I see it all now. That's it! What we have been saying here is just exactly what we, as a people, have been doing for the last thirty odd years. Let's go back further than that.

In the beginning, our founding fathers got off to a bad start. This was because they imported the European Price System of Trade and Commerce along with their firewater and

holy writ. The firewater and holy writ would have been all right if they had only left the ancient and lousy Price System behind. However, it seems that the three go together on all exploration and colonization ventures. At least, they always have.

After that, we proceeded to take the Continent away from the native Indians. This was history's slickest job of expropriation. The weapons used were cheap glass beads and baubles, steel knives, firearms, treaty breaking, starvation, concentration camps, segregation, assassination and, of course, firewater and holy writ.

The Indian's fealty had always said: 'I belong to this land.' That's about what you'd expect from a dumb Indian. Our improved Price System fealty said: 'This land belongs to me.' In view of the Indian's dumb attachment to the physical Continent that bore him, you can easily see that his removal was a blessing to civilization. Of course, this land belongs to us, until erosion, waste, dust, degradation and death do us part. Yea, verily! The white man's burden grows heavy at times. We managed to bear up heroically, however. Besides, it was very good business.

After that we settled down for a long spree under the tri-color of 'free enterprise' business, politics and clericalism. We headed straight for that blue heaven of the Price System, perpetual expansion and prosperity, compounded at 6 percent.

Something New Was Added

About that time the steam engine came in. It was followed shortly by the cotton gin, the railroad and steamship. The factory system of production became possible. The first blast furnaces and rolling mills were built. Power looms, iron plows, reapers and

seed drills were developed. The American Price System began to expand. It grew like Jack and the Beanstalk. Remember what a heck of a time Jack had reaching the top of the stalk because it grew faster than he could climb. So, for a long time, the Price System expanded faster than the technology causing the expansion. Times were good. American free enterprise became the umpteenth wonder of the universe.

In the middle of this heavenly process, a slight interruption occurred. It was called the Civil War. After having thrived mightily by kidnapping Negroes from their warm habitat in Africa and selling them as slaves in the warm territory of this country, we decided to abolish slavery. We wiped out the plantation culture, struck the iron chains from the slaves' legs, imprisoned them more securely with the invisible chains of economic compulsion, and sent the carpet baggers all over the South to reorganize it along more approved Price System lines. It cost us only about 800,000 American lives.

With that righteous duty out of the way, we marched on to greater and greater Price System victories. A new series of developments came to help the good cause along. Among them were the telegraph, telephone, turbine, internal combustion motor, vulcanized rubber, the gang plow, binder, separator, tractor, artificial fertilization, irrigation and the homesteading of the west. We roared along, tearing up the Continent and leaving it in ruin behind us.

We cut the timber from Maine to Minnesota to Washington. We cut and moved, cut and moved, laying the land bare behind us to be washed away by wind and rain. We mined the soil from the Atlantic to the Mississippi and on out to the far reaches

of the Great Plains. We mined for crops and when the land yielded no more, we left it to bleach in the sun and run in the floodwaters down to the sea. We moved on to better picking. 'We built a hundred cities and a thousand towns.' The cost? It cost only about 5/6ths of America's forests and a half of her cropland.

Columbia, The Gem Of The Ocean

We came at length to the opening of the 20th Century. The frontier was gone, gobbled up by the great mass migration of big and little free enterprisers, each one bent upon chiseling out a preferred spot for himself. The Power Age was upon us. But we didn't know it. Socially speaking, we didn't know our own hind foot from a hole in the ground. Most of us don't to this day. All we ever knew, as a people, was to get while the getting was good, and damn the dopes who might hint otherwise. The rope was getting shorter, however. We were soon to come face to face with some of the hard facts of life. We were soon to learn that physical laws can't be violated. They will take their relentless toll sooner or later.

The new century witnessed a new series of developments destined to expand the American Price System still further. In came the mass production of interchangeable parts, electrification of industry, automatic mechanisms, technological processes, the photo-electric cell and electronic tube, making possible large scale operations in automobiles, trucks, aviation, ship-building, radio, television, ferrous and non-ferrous alloys, light metals, wood processing, plastics and synthetics. Alongside this came rural electrification, mechanization of farming, hydroponics and agrobiolgy.

The Power Age was upon us, but we were still rooted faithfully and

asininely in the dead past. When the depression of 1893 struck, we did not know that it was the first major oscillation of the economic system under the impact of technology. There was a 27 percent shutdown in pig iron production. We recovered and expanded to higher levels. The next oscillation of the system occurred in 1908. The shutdown in pig iron reached 38 percent. These oscillations caused financial depressions also. We noticed that and ascribed the events to the mysterious operations of money. No such thing.

The financial phenomena were a symptom of the underlying impact of technology. We did not know that, for there had not yet arrived on the American scene the Man and Organization qualified to diagnose the physical causes of depression.

Lafayette, Where Are We?

The years rolled on. Then a mastoid degenerate with a shriveled arm, sitting on a throne in Central Europe, set the world on fire. The slogan of his goose-stepping puppets was: 'Deutschland Ueber Alles, Ueber Alles In Der Welt.' Well, we couldn't take that. So, we girded our loins, went out and knocked over this Kaiser fellow. We 'made the world safe for Democracy and the rights of small nations.' Also, for the foreign investments of Wall Street. That was most important. We 'dood' it, to the tune of 'Johnny Get Your Gun,' 'Over There,' and 'Keep The Home Fires Burning.'

The home fires didn't burn brightly for very long. In 1921 we were laid low by another oscillation of the economy. This time the shutdown in pig iron was 57 percent. Recovery was slower. However, we managed it with the aid of foreign loans of the give and try to forget type. Then

came the booming twenties financed by more foreign loans, installment buying, and organized crime on a national scale. We jazzed our way through this period, deaf, dumb and blind to everything but bath tub gin, chiseling, tommy guns and stock market gambling. 'Everybody's Doing It Now.'

'Not Without Honor—'

In that Price System wilderness of 1921 there was a social scientist who knew what the score was. The man America needed had arrived. His name is Howard Scott. He spoke up and predicted what would happen. He said:

The increase in total number of kilowatt-hours resulting in increased productive power and diminishing man-hours will compel an industrial and financial crisis by 1930.

Scarcely anybody paid any attention.

Whoever heard of this crackpot engineer? Whoever heard of such nutty reasons for a depression? Every sensible man knows that hard times are caused by the mysterious behavior of money. Why, it's ridiculous! Our economists have drawn up charts going back to 1776 showing how money behaves. Our bankers know all about money. You betcha! They know how to take a buck and lend it out for 6 percent interest. Didn't one of our famous economists prove conclusively that all we needed was 'honest money.' Kilowatt-hours, man-hours, what kind of rubbish is this? On with the dance!

'Sky Red In The Morning—'

October 24, 1929, dawned like any other day. There was nothing to indicate that fate rode up over the Eastern horizon with the Sun that morning. Before it sank into the Western

sea that night \$5,000,000,000 in Price System stock market values had shrunk back into the nothing from whence they came.

America hasn't been the same since. It never will be. Technology wrote across the walls: 'You have been weighed and found wanting.' But, we hang on to the ancient and lousy Price System, like a faithful dog waiting patiently at his master's new-made grave. We hope against hope, and believe against all the facts that somehow or other master will come back to us.

Master didn't recover from the crash of 1929. As the months rolled on, the crisis deepened. Pig iron production dropped off 79 percent. Nineteen thirty, 1931 and 1932 came and went. Conditions worsened. They got so bad that a Congressman, A. J. Sabath (Dem. Ill.) was inspired to write a new psalm. Part of it went like this:

Hoover is my shepherd, I am in want.

He maketh me to lie down on park benches;

He leadeth me beside the still factories, . . .

Yea, though I walk through the valley and shadow of depression,

I anticipate no recovery, for thou art with me . . .

Surely unemployment and poverty will follow me all the days of your administration . . .

Hoover's administration ran through its dreary length. The new deal came in. The money changers were chased out on the front steps of the temple. The still factories remained still. Since nothing else could be done, the American Price System went on Government relief. It's been there ever since. The proud tycoons of finance, business and industry who had bragged

before the world of their genius stooped low down, very low down, and accepted government charity. Between 1934-1945, the U. S. Government paid out in charity handouts (subsidies) to business over \$8,000,000,000.

Taking all the farm owners and small business men into consideration, there are not quite 10,000,000 established free enterprisers in the U. S. They got the \$8,000,000,000. Relief to people in the form of made work and direct charity during the same period amounted to \$13,000,000,000. Good old free enterprise, of course, got this on the rebound. People have to eat, don't they? This \$21,000,000,000 solved nothing. It was money thrown down the rat holes of the Price System. Not a single cause of the depression was attacked, not a single solution worked out. We just drifted. By 1940 there were still 9,000,000 people unemployed.

Sieg Heil! Sieg Heil!

Then another foreign tyrant came to the rescue of the American Price System. A psychopathic, house painter, who had been a corporal in the Kaiser's army, took over Germany. He was vouched for in sanctified and respectable circles, and subsidized by the triple oligarchy in the Western Democracies. These are business, politics and clericalism. Had this Hitler fellow with his nutzy Nazis not been a screwball, all would have been well. He declared a holy crusade against the Bolsheviks. That was fine with American corporate enterprise. He went off the beam, however, and began to make passes at the vested interests on this Continent. That was too much!

So, we girded our loins again and fared forth. We knocked over Nazism, Mussolinism, and Hirohitoism. That is, we did it with the major help of

the despised Bolsheviks. They furnished most of the blood. We furnished most of the money. The capitalists of America and the Western democracies defeated the capitalists of Germany, Italy and Japan. Not once during all the carnage did our government make an official announcement that we were fighting against social fascism. Indeed, we were not. We fought for the preservation of the status quo. Political democracy vs. totalitarianism; Americanism vs. Nazism; the four freedoms vs. dictatorship, but never the people vs. social fascism. 'Tell it not in Gath, publish it not in the streets of Askelon.'

*'The Clock In The Steeple
Strikes One'*

Of course, World War 2 made a lot of business. Since June, 1940, the U. S. Government has spent over \$348,000,000,000. That's BIG BUSINESS. Such a terrific injection of purchasing power into the economy is bound to give it new life. It did. For the last six years, the American Price System has prospered as never before. Every Tom, Dick and Mary has had some kind of a job. Every chiseler has grown fat from the easy pickings. Every sucker has approached closer to the dream of all suckers to get to be a chiseler. It's no use, though. All the evidence indicates that our postwar prosperity looks like the last bright flicker of the Price System flame.

It required 10 years after World War No. 1, from 1919 to 1929, for technology to bring the Price System down. This time it may well happen in one-fifth of that time. By two years from V-J Day, or in the Summer of 1947, the American Price System will again show the symptoms of its fatal disease. This time there may be no escape. We have just about used up all our stop-gap alternatives. It's time

to pay the fiddler. What have we to pay with?

As a people, we have always tried to delude ourselves by adding up our social problems wrong. When they grew to proportions impossible to ignore, we looked at them through the small end of the glass. That is, we approached them from the wrong direction. We tried to force them to yield to the slippery propositions of politics, business and finance. It never worked, but that's all we knew. In our singleminded devotion to personal gain and social pusillanimity, we have waxed mighty in our own eyes. We stand naked now before the bar of history, charged with the responsibility to solve social problems that never existed before.

Nothing to Fear But The Price System

From where America stands today, near the end of the Price System road, two unmarked trails stretch off into the future. One goes straight ahead and one goes to the right. The road to the right leads downward into a low, swampy country. It winds downward through the dark forest of social problems that grow ever denser and more insoluble. If one travels it far enough, he can see how it circles around and finally turns back toward the past. At this point it is strewn with the murdered hopes and aspirations of men and women. Its pathway is lined with the lost causes of humanity. Every so often a signboard looms, as we plod along. The first one says: 'Believe as I believe, no more, no less.' After a while we see another. It says: 'That I am right and no one else, confess.' And so on, for dreary century after century, as we plod along the low road that leads to the past.

We perceive that this is the road of social fascism, of authoritarianism.

This is the road onto which the triple oligarchy of business, politics and clericalism wants to force the people of North America. Fascism, after having gutted the subcontinent of Europe for 1,500 years, wants to set up house in North America. It wants to attach itself to the technological culture of this Continent. It wants to cancel out the gains made by Science and Technology in the last two hundred years. It wants to divide up America's abundance with the world that its operations has laid low.

It wants to equalize scarcity everywhere and thus stabilize the status quo on a lower level of living standards. Fascism is a going backward in culture and technology. Any going backward of any type in this Power Age is fascistic. We can learn nothing from the fascist past. The entire record of human history is a record of fascism of one degree or another. Today the apostles of fascism sit in high places. They are fat, smug and respectable. These are the prime movers of fascism. They can be found in every city, town and village of North America. They are of the essence of the Price System.

'Properly Ordered And Rock Solid'

The trail leading straight ahead goes upward to a higher country. There the air is cleaner, the Sun shines brighter, and the land is richer. This is the road that leads to a higher form of civilization with abundance, security, equal opportunity and physical democracy for all citizens. As we push upward, we note a signboard along the road. It says: 'Only that which can be measured is real.' After awhile we see another. It says: 'All phenomena involved in the operation of a social system can be measured.' The road continues on up until it is free from all connection in time, culture and

technology with the fascist past of humanity.

We perceive that this is the high-road of science and technology. Along its sides we see no lost causes, no murdered hopes and aspirations of men. Instead, we note monuments to all the worthwhile things of modern civilization. We note that all of them came about as a result of the advance of science and technology. We note that in the progression of this road, in the type of country it is leading into, Science holds forth promises of still greater benefits to come. We know now that this is the road into the promised land, into the dream that was America, made real.

We hurry back to the forks at the end of the Price System road where the stream of humanity is milling around, not knowing which way to turn. We want to tell everybody that this is the correct road. Upon approaching, we see that more and more people are going straight ahead. Then we notice a huge sign that says: 'Technocracy is Science applied to the social system. This way, Mr. and Mrs. North America.'

So, at last, the Oranization as well as the man has arrived, that is qualified to point out the correct direction. After long last, after generations of chiselers, politics, robber barons, smug clerical fascists and nice people, North America has produced something worthwhile.

Technocracy has everything. It has the answer to our social problems. It has the deadly correct analysis of the Price System. It has the schematic design of a new and far better social system. This will be a non-political, non-profit, non-sectarian social system, without money and without Price. This type of social system will lift North America up to a far higher plane of civilization. Not only that, it will be the lever and fulcrum that will also lift all the world out of its ages-old morass.

If you doubt this in the slightest degree, you owe it to your own intellectual integrity and the welfare of your country to join Technocracy now and investigate all its claims from the inside.

Good Old Free Enterprise

The old gent had been in business for 40 years. He had a nice store, packed full of merchandise and plenty of money. His son was graduated from high school, and then took a four-year college course, including business administration in every detail. Finally, the son was ready to enter business with papa.

"Dad," he said, "when are you going to take inventory?"

"What do you mean, inventory?"

"Well, said the son, 'you have to know what you have on hand, what it cost you, how much for carry-over, to find out how much you have made, etc.'"

"Son," said papa, "measure that bolt of calico in the top left-hand corner of

that shelf, and figure out what it is worth. That's what I started with. All the rest of this place is profit."

The performing flea and an elephant crossed a jungle bridge together.

'Oh boy,' whispered the flea in the elephant's ear, 'we certainly made that bridge shake!'

'The forgotten man works and votes; generally he prays; but his chief business in life is to pay.' (William Graham Sumner, (1840-1910) professor of political economy and social science at Yale University.)

Slogans Are Not Enough

Better Distribution For Better Living

By R. J. Kugelman, 12247-3

'Look Magazine' for December, 1946, had an article by Eric Johnston entitled 'More Production Means Better Living.' The emphasis throughout was placed upon production. In fact, the word appeared 38 times. But, distribution, an equally important function was not mentioned even once. This omission was obviously deliberate. In the flood of propaganda poured forth by the National Association of Manufacturers, the U. S. Chamber of Commerce and other organizations, plus a host of so-called economists, the key may change from time to time but the tune remains the same.

Every Man a Capitalist

REGARDLESS of how much production we have there will be but little increase in the average person's standard of living until we have a more efficient system of distribution than now exists. Our system of exchange did a fair job of distributing the limited production of our scarcity economy prior to 1919. Since then it has broken down under the impact of potential abundance and now does more to retard than to facilitate the flow of goods and services to consumers. This is clearly shown by the admission in the Look article, that: '... in the 40 years before World War II real earnings of industrial workers were approximately doubled.'

This statement means little since it gives no hint as to how low the real income was at the beginning of the 40 year period. If a starving man has a quarter loaf of bread and someone gives him another quarter of a loaf his real income has been raised 100 percent. The improvement in his lot consists in the fact that he can now starve at a slower rate.

If our Price System is so wonderful why has it taken four decades for a nation with over 50 percent of the world's resources to only double the standards of just one group of workers? If any other nation had only $6\frac{1}{2}$

percent of the world's population but possessed over 50 percent of the world's resources and required 40 years to double the living standards of people our propagandists who uphold the Price System would turn on them with scorn instead of glorifying them.

After generations of Price System operations on this rich Continent why were one-third of our people still ill-fed, ill-housed and ill-clad? That damning indictment of our failure to increase living standards by much more indicates that the vaunted 'participating capitalism' referred to in the Look article is mostly hot air.

During the 1944 boom year the Senate Special Investigating Committee reported that, some: '... 20,000,000 people in the United States exist between subsistence and privation', or semi-pauperism. In the same year Surgeon General, Vice Admiral, Ross T. McIntire of the U. S. Navy revealed that: 'About 23,500,000 fellow Americans are suffering from chronic diseases and physical impairment because they cannot afford to pay the high fees demanded by private medical practitioners.' That plainly indicates that even the vast outpouring of a flood of easy money from taxpayers did not effect any proportionate increase in the distribution of goods and services.

Mr. Johnston's proposal to 'make every man a Capitalist,' is by no means a solution to any of our problems as it would merely compound the existing chaos. If we succeeded it would be equivalent to sentencing these budding entrepreneurs to failure in the first few years. In the super-boom year of 1946 over 175,000 small businesses gave up the struggle, according to the Department of Commerce. That is a daily average of almost 480 failures per day. Nearly thirty out of every hundred small business organizations fail in the first year and about two-thirds quit before the end of the fourth year.

Production For Waste

Our Price System, or 'free enterprise,' economy can be maintained only by the continual creation of artificial scarcity, because abundance destroys price.

Recently we have heard much about a supposed 'surplus' of 100,000,000 bushels of potatoes. Since, they have either rotted away or been deliberately destroyed all over our nation. Surplus does not mean that these 100,000,000 bushels were not needed by millions of Americans existing on sub-standard diets. It means that we had more potatoes than people had the money to pay for. Waste, misuse and destruction are necessary to maintain the outmoded price structure upon which our economy is based.

The Look article states: '... we can double our standard of living again in 20 years if we have peace and a reasonably stable economy.' Since we never had a stable economy in the 22 years of peace that preceded Pearl Harbor what is going to stabilize it now? All the Price System has to offer is more of the same type of operation that brought instability originally.

Is it possible to have either peace or a stable economy under 167,000 different government bodies, federal, state, county, local and city, when all of them overlap, duplicate and conflict with each other. Adding to that mess we have over 3,500,000 entrepreneurs constantly fighting each other or conniving against the General Welfare. This is not mentioning the numerous minority pressure groups fighting for special advantages.

Out Of Many—One

Even Roger Babson, who is a staunch defender of the Price System in an article in *Collier's* for March 4, 1933 entitled, 'Don't Let Them Kid You', admitted: '... the Technocrats are right in criticizing our seventeenth century system of giving eternal life to debt,'; and 'We cannot continue in a twentieth century mechanistic age with a seventeenth century financial system.' By those two admissions Mr. Babson practically nullified most of the article which was, chiefly, an adverse criticism of Technocracy.

If we want to avoid a severe depression which may develop into an economic cataclysm the theme song of the Price System, 'Produce and Destroy' must be quickly changed to 'Produce and Distribute' scientifically. In an integrated economy based on functional operations such as the Technate of North America all forms of scarcity would quickly disappear. Instead of requiring another 20 years to double our present standard of living it could easily be trebled, or quadrupled, in much less time.

In a Technate our thousands of conflicting governmental bodies would be replaced with a single government of functional control operated by a Continental board of governors. You will not elect these governors because you like their personal charm or their

persuasive radio voice. They will be chosen on the basis of their demonstrated ability, in some previous capacity, to perform their essential functions on the board. Here we have order replacing chaos.

Instead of millions of Americans living in wretched shacks unfit for human habitation there would be modern scientific housing far surpassing the best there is today. It would take only a few years to do this.

Today we have a totally inadequate rail and highway transportation system with its thousands of needless deaths every year. In a Technate we would soon have a smooth running, efficient system of rail and highway transportation far superior to the best there is now.

Today, our educational system is a shambles. Our schools are short over 60,000 teachers. Over 10,000 class rooms are closed entirely and other thousands are supervised by under-qualified personnel. In a Technate we would have a real educational system far superior to the best today. The quantity and quality of education would be raised to new heights. Students would travel all over North America, on vastly improved waterways, as a part of their education. They would visit and inspect industries and farms. Thus, they would learn at first hand what processes were being used. Each one would be in a better position to determine what vocation to pursue in later life. Occupational misfits and economic and social frustrations would be reduced to a minimum.

Thus, not only the coming generations would benefit greatly but the whole social system would be enriched by greater contributions to it. Today, we jump around blindly from job to job, trying to make more money so

as to 'get by' a little better. We spend a prodigious amount of effort in figuring 'angles' to 'beat the system.' It would be far simpler and easier to change the system than to chase around in insane circles. The job would only have to be done once.

'Sloganeering' or Engineering

In summarizing, Technocracy, Inc. states that in a Technate every man, woman and child would be assured of adequate food, clothing, housing, education and health protection; plus equal opportunity in life for all citizens and security from birth to death. This can be realized in far less than twenty years. These factors sum up to better distribution. This is inherent in the form of organization and operation of the Technate of North America. It spells better living for all.

N.A.M. and all the other successful chiselers under the Price System may be very adept at 'sloganeering.' But, slogans are not enough. What is needed is engineering, social engineering. Slogans solve no social problems under the Price System. Their purpose is to get your eyes off the problem.

North America needs a new way to live, a new design of social operations. The possibility for this exists in our present advanced stage of technological development. The social design for translating this possibility into reality also exists. Technocracy has the blueprint. The necessity for adopting this design will become more pressing in the immediate future.

Every North American owes it to himself to check up on Technocracy's analysis and synthesis. Join Technocracy and investigate it from the inside. Then help do something about it.

See America—Before It's Too Late

What Is It To You?

By Helen Spitler, 8342-1

'No man is an ILAND, intire of it selfe; everyman is a peece of the CONTINENT, a part of the MAINE, if a clod be washed away by the SEA, EUROPE is the lesse, as well as if a PROMONTORIE were, as well as if a MANNOR of thy FRIENDS or of THINE OWNE were; any mans DEATH diminishes ME, because I am involved in MANKINDE; and therefore never send to know for whom the BELL tolls; it tolls for thee.' (John Donne (1573-1613) English poet and preacher.)

Am I My Country's Keeper?

HAVE you ever seen a pine forest after it had been swept by fire, with its bare, charred trunks standing black against the sky? Have you ever seen an abandoned coal mine, topped by a ghost town that once flourished with life, activity, warmth? Have you ever seen a wheat field on the prairie after wind and hail had flattened it into a twisted mess; or a field of potatoes that had been dug up and left to freeze and rot on the ground.

There is no joy in these sights. But, there is something else. What is it to you?

Put yourself in the position of a Doctor who has a patient with a strange new malady. Connecting bands of tissue are drawn tight, shutting off circulation at many points in the patient's body. In the hand a metal coin is clasped so tightly that the fingers are turning blue, and useless. Suppose that medical history records no similar case. There is no precedent to follow in treatment. A scientific, workable plan is presented but

the Doctor cannot adopt it. What stands in his way? Lack of consent and cooperation by the patient's guardian.

There is no joy in a sight like this either. But, there is something else. What is it to you?

You are the guardian of North America. It, too, is sick unto death. Improper circulation is at fault. The flow lines of goods, through production and distribution, must be opened. Irreplaceable natural resources are wasting away, dangerously. Technocracy offers a solution. Will you, the guardian of this land, give your consent to open these vital flow lines?

What is it to you? It's what it is to your country. Only a matter of security or insecurity; special privileges or equal opportunity; abundance or scarcity; civilization or fascism; life or death; Science or Chaos. That's all!

Passive consent is worthless. Active assistance is imperative. Join Technocracy, the only organization with a scientific, workable design for the functional operation of the North American Continent.

'Since 1926 the total forest acreage planted in the United States totals less than 6,500,000 acres, and the record indicates that there are 75,000,000 acres of land on which tree planting is needed . . . But nine out of ten of the trees

needed have not been planted . . . At the average rate of planting of the last 20 years it would take 600 years to do the job. (From a recent statistical survey by the Forest Service quoted in the USDA Clip Sheet, March 23, 1947.)

you don't discover, someone else will. A 'holiday' for science would be a national calamity. Technology will expand and advance as it has in the past just as long as people have unsatisfied desires, both material and mental. The problem is to adapt our social order to the inevitable.

The 'last lecture' can end in an optimistic vein. The several fundamental trends which form the broad pattern of our progress through time can be recognized. Analysis can follow recognition, and upon analysis plans of action can be established. Our

'democratic system' contains a wealth of principle and so far has served our needs as no system has served others. Rather than despair or rather than accept the weaknesses in a passive manner without action, the pattern of democracy requires the continuous effort and participation of every one to provide strength and correct faults. The application of the combined intelligence of all specialized groups is necessary to cope with the modern problems; hence, I repeat, equal responsibility to do one's part is the heritage of all.

One Way Street

'There is no road back from the agricultural revolution that has been experienced during the inter-war period and World War II. I just don't think farmers are going back to horses and mules or discard hybrid corn and go back to open-pollinated. I don't think they will abandon soil-saving and improving practices.

'These revolutionary changes have come into full flower during the war, to be sure, but the stage was set long before the war. The depression of the '30's, followed by the drought, held these changes in check. The war needs simply broke the dam.' (Dr. Sherman E. Johnson, Assistant chief of the Bureau of Agricultural Economics in the U.S.D.A. Clip Sheet, October 20, 1946.)

'As of July 1st this year, the independent telephone systems of this country comprised approximately five and one-half million telephones—which is more than all the telephones in Sweden, Russia, Asia and Africa combined, plus a million more phones left over.' (Kellogg Messenger, published by Kellogg Switchboard and Supply Company, August, 1946 issue.) *Ed. Note:* The number of so-called independent telephones is less than 20 percent of the total number of telephones in the U. S.

It takes 1½ man-hours of labor on a dairy farm to produce enough milk to make 1 lb. of butter. (From release of American Dairy Assn.)

'It takes six tons of coal to make an automobile or truck weighing one and three-quarters tons. (*Automobile Facts*, October, 1946).

The agricultural products from 1,000,000 acres go into the building of every 2,000,000 motor vehicles.

Between 1910 and 1940, says a Twentieth Century Fund survey, industrial production almost doubled, due chiefly to increased output per man-hour.

If all the productive equipment on this Continent were in operation continuously at its maximum efficiency, it would produce an abundance beyond the physical capacity of the population to use. There is no physical reason to prevent the social mechanism from being coupled to the physical requirements of the whole population. All that is necessary to bring this condition about is to change the operating rules. Join Technocracy and see how easy and how soon this can be done!

Contract of Citizenship

So You Think You Think

Part 2

By Roger Elgood, 12348-1

In the first part of this article, printed in the last issue, the nature of agreement was defined. The pig in a poke called the Four Freedoms that was unloaded upon a gullible world was dissected down to its bare bones. It turned out to be a stuffed dummy. Nevertheless, its skeleton will rattle in the Price System closet for a long time. The difference between the scientific and political approach to problems was outlined. Then the nature of our social problem was defined as being both a physical problem of production and distribution of abundance and a mental problem of straight thinking. The latter consists largely of cleaning the medieval rubbish out of our think tanks, and refilling them with scientific concepts. The process of how we get ideas was outlined and the incompatibility between our ancient, hold-over ideas and the facts of modern civilization clearly set forth. Copies of the last issue are still available for those who want to read the entire article.

Beware of Precedents

THE influence of pre-accepted aspects on seemingly similar problems has a great deal to do with our conclusions (or confusions) regarding our outlook on present matters. In our efforts to cope with the more complex present, we are induced to project into the picture pre-existing aspects as instruments for reasoning. At first glance they seem to be quite relevant. We employ these old aspects of a case in spite of the fact that they are not a true picture of the same sort of case today. They are something that has been passed on to us, more or less modified from time to time but nonetheless out-of-date. We accept them as pertinent because of their resemblance and through our credulity. We believe in them because some sort of evidence upheld them at one time. Therefore we *will* ourselves to believe they apply today without any evidence whatsoever. We cling to these 'steady habituation thoughts' with stubborn tenacity, encouraged in such views by those whose interest it is to discourage doubt with every conceivable means at their disposal. The last thing re-

quired of the individual by the proponents of the status quo is the tendency to doubt or the desire to find out. This is the strategy of tradition. Thus we confound what we assume to be original thoughts on a matter by preconceived ideas, ideas that are largely a reflection of the particular point of view on a similar subject that was in vogue at the time an aspect was first formed.

The history of events does not repeat itself exactly, yet it is on these past events that most tacit provisions of agreements are based. Furthermore, the particular sphere of society that has been occupied by the actual authors of an earlier aspect has a profound influence on the type of reasoning they employed and the nature of their point of view. The degree and type of education, the general contact of their environment, traditional and customary habits, all play their part in creating an aspect toward a subject.

The origin of similar and different opinions of one subject is infinite. Yet we apply this doubtful knowledge to solving our vital problems when this very diversity predicates contradiction. By employing 'aspects' in

preference to 'percepts' we express an opinion of a similar problem, but one that embraces entirely new factors. We ignore these factors largely because we do not understand them, and by not understanding them, we can easily induce ourselves to see things as we wish to see them. We visualize our outlook to suit our present knowledge instead of bringing our knowledge up-to-date with the evidence of the present situation.

And so we stubbornly champion our views with extremely 'valid' explanations, explanations devoid of any evidence or reason. So, for multiple unreasons we blithely discard logic in defense of our credulity, egotism and ignorance. Habit becomes unconscious. Thus by the process of steady habituation, unawareness and antipathy of any challenge results. Our aspects in time assume the quality of being axiomatic. With persistent repetition the act of stating a certain thing is so proves it to be so to the addict.

We are surrounded by the results of science and we approach that which surrounds us with minds devoid of the way of science, cluttered up with old aspects that knew it not. By mendacious distortion, we make evidence that does not exist. It has been said that the prosperity and security of this Continent depend entirely on our foreign trade. This means that before we can enjoy what we have, we must sell a good share of it overseas, in order to maintain 'purchasing power' for our people to acquire something they already possess. Even the 'evidence' doesn't make sense.

The problem of security is presented to us by the status quo with over-emphasis on an individual's 'freedom' to be independently secure by his own efforts. The main causes of our troubles are insinuated as being various maladjustments between the two distinct grooves of society in which

we are inadvertently channelized, i.e., chisellers and suckers. This is the modern version of the old strategy 'divide and rule.' Actually, there is no room for discrimination between these grooves in society today. All the rules of the Price System techniques are opposite and antagonistic to the problem today. Hitherto, man's fundamental rules to survive were essentially individual rules. Interdependence of individuals was of little moment to survival because of scarcity. Today the tables are turned. Survival depends entirely on the continued and progressive operation of applied science and technology. Owing to the complex nature and interdependence necessary to maintain our modern social structure, survival is entirely a matter of close teamwork and integration of operations. Although hardly realized yet, life itself depends on this entirety, and abundance results from it. Abundance can be fully as deadly as scarcity if there is no access to it. So, although easy survival spells abundance, the attempt to distribute the abundance by a price depending on scarcity decrees annihilation. A system of society, wherein the more it produces the less it consumes is traversing per se a course of self-destruction.

Do we not realize that some degree of mendacity must be employed just so long as we have a system of society with different interests to serve. This Price System is NOT a social mechanism designed for a society with *one* interest, as an integrated whole for one common objective, SECURITY with the minimum of effort for all.

Every strategy employed to maintain the Price System of the status quo is based on prevarication, and aimed at credulity. The nature of the whole problem to perpetuate free enterprise decrees this must be so. In the face of the facts, its defense *must* be made by distortion. If this were not the case,

political and business propaganda would be unnecessary. The political solution to the problem of insecurity would by now be self-evident. Such is not the case.

Pinning 'Security' Down to Bedrock

In the foregoing part of this article an attempt has been made to pave the way for formulating a social agreement to provide a state of freedom from insecurity. Now we must clarify the agreement in order to know exactly what we mean by it. This suggests some pertinent and relative questions, each of which must be taken into consideration.

1. What constitutes economic security?
2. Do we *mean* for the whole of a population?
3. If so, can we reduce 'population' to a factor of life, common to everyone (regardless of race, creed, color, sex or economic level)?
4. Are there to be different degrees of security for certain individuals?
5. Shall the means of security of one be allowed to adversely affect the security of another?
6. Do we mean the *whole* of the resources, in the area under the control of a population, or only certain parts of it?
7. Can security be measured, or placed upon a measurable basis?

Unless we postulate an answer to these questions first, it is a waste of time to continue. Our work would be pure guesswork. This is exactly what our opinions on these matters are today when we appeal to that sacred cow of the status quo, the consensus of opinion. During the powwow some witchcraft having to do with the imponderable power of multiple opinions is expected to segregate a 'proper' opinion away from all the others. It is illegal to proclaim one's ignorance in

this respect to the world until one is twenty-one years old. After that age it becomes a civic virtue to do so. Such is the seriousness of nonsense. We insist that we can solve engineering problems by first deceiving ourselves.

As no government in the world has ever postulated as facts for common understanding any single one of these component parts involved in security (listed above) how could they possibly formulate an agreement having any real meaning? No hint of correlation in these questions has *ever been considered*, much less comprehended.

On this Continent it became self-evident that some underlying cause within the system itself was forever prohibiting security. Enormously increased production occurring simultaneously with progressive reduction in man-hours itself denotes insecurity. This amazing contradiction of the price economy annuls every concept of the 'governing laws of supply and demand.' For, within the Price System, the wages of man-hours are the 'low' demand for the 'high' supply of technological installation. Technology broke the back of orthodox economics long ago. We are trying to restrain price economy in a straight jacket constructed out of subsidies, price ceilings, floors and controls, restrictions, constriction and destructions, and still it refuses to conform as its adherents 'expect and believe' it should. They do not know that the trend of events is a *physical* demand that will violently reject every compromise made, including the stupid ones.

However, the situation was recognized as a physical demand by a few engineers, scientists and technicians, back in 1919. This technical alliance investigated the matter as a problem of social mechanics, that is, as a whole. They dealt with the substance of human society at prevailing conditions *regardless of all previous concepts of*

society toward its substance. The facts could be disclosed as such by impartial analysis. Any synthesis for security arrived at without the foundation of these facts would not function. The aim would be pre-defeated. Engineers do not operate that way. So, before deciding first what to do about what, whose, how and where (like the Big Three agreement to the Four Freedoms) these men commenced by finding out who 'we' were, what 'we' had, where it was and how much of it was available. Just an engineering idea. First, a definite meaning for population must be established. They reasoned that every citizen consumed goods and services; class, desert or worth meant nothing to them. To consume is a *common factor of life*. That we are all consumers is a veritable fact, so they postulated that 'we,' the population, meant *all* the consumers, because this was a FACT.

Next they encountered a concept called 'property rights.' Being an imperceptible concept and hence not measurable, it was to them non-existent. The property rights of Tom, Dick and Harry prevent any clear and common understanding of the greatly misused term 'our America.' Our America can have real meaning only by virtue of the fact that we, the consumers, owe our existence to the perceptible act of utilization. The Continental resources, goods and services, are consumed by us because of our presence on this geographical entity. The act of utilization is a measurable chemical change. The consumers really have an unclaimed America. Here was another FACT. Our America meant the Consumers' America.

Having settled who 'we' were and whose America it was, the next step was to find out what America had for her consumers to consume. To execute this task, an energy survey of the whole Continent was conducted. By

intensive research every conceivable commodity requisite, natural resource, and installed energy-converting device was tabulated. In the course of this survey and subsequent research into its findings, the determination of energy relationships was established. This meant there was a common denominator between all the means whereby we live and what preserves life—ENERGY.

Analysis To Synthesis

By placing what we possessed on a measurable basis, it was possible for the first time in the history of man to state as a FACT just what economic security for all North Americans meant. They simply divided the population into the sum of the whole of the area's physical wealth. The answer was the available means of individual security for the population of the given area. This was all done in terms of energy because an energy unit is constant, never varies, and is applicable to every operation in our social system. However, it so happened that the answer to the above sum of simple division was *over and above* a sufficiency. There were enough goods and services even with obsolete methods of production in force to maintain the physical well-being of every citizen from birth to death with less man-hours of labor than hitherto. No service toward distributing or producing would be required of any one before the age of 25, or after the age of 45. Indeed, the scientific conclusion of the survey was that our potential wealth would provide every person on this Continent with a standard of living not less than eight times greater than that enjoyed by the majority at present. It was found that we had (in spite of our supposed insurmountable political problems) for the first time in the history of man attained abundance of goods and services. Adequate

distribution was the problem, not unemployment. By establishing as FACTS our questions numbers three, six and seven, they automatically answered all seven questions.

For the first time in history, economic security had a common meaning applicable to one continental population, North America. Even so, there was still the question *how to apply* distribution. These engineers realized there was only one method whereby this security could be effected. '*Functional control*' would be an indispensable condition to enable us to distribute our available security. The physical demand was now clear. It was not a demand for dictatorship or regimentation, the demand was for a common obligation to the culture of function, as the gateway to liberty, freedom and security. A conduct of mind applied to everyday life, that conforms to, instead of conflicts with our advanced way of life, the Power Age. (Remember, the intersections!)

Without this culture, so-called explicit and undefined tacit agreements on the subject of freedom from insecurity are purely a farce, a farce that will swing to tragedy should we fail in the conduct of our minds.

For a quarter of a century North American political and business leaders have sought to break the economic impasse. Indeed, the 'jobless' problem has assumed the magnitude and quality of an imponderable to many people. They shun and fear that which they do not understand, and most of them have never learned *how to think* in order to understand. Let's have an America void of all questionable agreements. Let's have security commensurate with that which is perceptible, attainable, tangible, verifiable, clothed in terms of existing quantities. Let us fearlessly measure these quantities both for use and replacement, and with this knowledge realize forever

that price never has and never can cope with plenty. Let us develop and apply this culture that is worthy of man in the place of a culture that has become largely one of withdrawn efficiency, artificial scarcity, waste and destruction, plus unequal advantage, manipulation and sinister intrigue.

Technocracy, Inc. has been called, amongst other things, a Body of Thought. The term is very appropriate, as without some discipline in the conduct of our minds, no progress can be made in the field of social mechanics. The Technate of North America is attainable *now*. It will be neither explicit nor tacit because it will be an agreement in accordance with the physical facts *at the time of fulfillment*.

One Continent, one people, one culture, one interest, one and indivisible. The only blueprint of Continental Unity and security ever offered is by the nature of things the *sine qua non* of any *sane approach to World Unity*. First things first! Grasp that which is within our reach before we reach for what we cannot grasp.

America must show the only way there is to achieve the Four Freedoms. It is the only entity in the world that is in a position to do so. Every requisite is at our bidding, *and within the Continent*.

Technocracy has stressed repeatedly that it is a voluntary act to acquire the necessary 'attitude of mind' for effecting functional control. The function of Technocracy Inc. is to assist the citizen to willingly acquaint himself with this culture. In this way alone will he be equipped to satisfactorily assist in the translation when the coming crisis occurs.

Can you qualify?

The Census Bureau estimates that nearly 27,000,000 civilians migrated during the war.

The Moron's Delight

Two Paradoxes of Technology

by R. W. Herring

Only One Way To Add Two and Two

The first paradox of modern technology is that while it requires a great deal of accumulated knowledge to create a highly complex machine, almost any moron can operate it. Any child can operate a radio. It took engineering brains to create it. Our social system in America today is the most complex physical mechanism that ever existed anywhere at any time. Yet we are operating it with methods that would delight the heart of any dyed-in-the wool moron. We operate it as though all the parts were separate and complete units, instead of being integral parts of the whole which must be operated in proper relationship to the other parts. Is it any wonder that our social system is well on the way to breaking down?

Business and politics are the morons at the controls of the individual parts of our technological social system. Every private enterprise moronically insists upon operating its part when it pleases, as it pleases, without regard to the resulting effects upon the other parts or the mechanism as a whole. The public senses this and exhibits unrest and concern. Unable to discern the trouble, it takes refuge in escapisms; some go to the beer garden, while others go to

church, so to speak. Both are seeking escape from what they fear and cannot understand.

Our social dilemma is not as difficult as it seems, however, once the problem is correctly stated. Here is a brief outline of the American social problem.

First, we must understand that our social problem is a physical problem, a technical problem. This postulate is inherent in the technology of American civilization. It is an axiom in the working out of physical problems that the choice of methods of solution is in inverse ratio to the scale of magnitude and complexity of the problem. The tougher the job, the fewer ways there are to do it. When any physical problem reaches a certain point in magnitude and complexity, only one method of solution is possible, and there is no choice whatever left to us. This is the point we have now arrived at in our social operations in America. Our problem can be solved by one method and no other. Paradoxically, then, our problem, instead of becoming continually more complex, becomes steadily easier to understand and solve, once the factors are all stated.

Taboos Of The Power Age

There are certain things that can't be done. You cannot take all the

parts of a highly complicated machine, toss them on the floor for a bunch of kids (or morons) to play with and expect them to assemble a complete, smooth running machine that will perform the function for which it was designed. Neither can you take a technological social system and hand the various parts to politicians and business men and expect to get a smooth running machine that will turn out the physical requirements of the people of America. The American social mechanism consists of the individual technological parts: the farms, mines, factories, communications, transportation, educational, recreational and entertainment facilities, plus that 'Orphan Annie' of business and politics, distribution. This is obviously a problem of engineering design, of integration and coordination. Engineers, using the methods of science, have designed and built all the various parts of our social system. They and they alone are capable of assembling them into a social mechanism that works properly.

It cannot be done by lawyers dealing with those imponderables called 'right' and 'wrong,' for these have nothing to do with the physical world. 'Right' and 'wrong' are abstracts and represent nothing real in the physical world. Consequently, there is no operation that can be performed with them which will result in a close agreement among men as to their exact characteristics. Being non-existent in reality, they are not subject to physical laws. Thus there will always be as many different in-

terpretations of 'right' and 'wrong' as there are individuals possessing such concepts. Agreement being impossible, it is therefore necessary to abandon 'right' and 'wrong' as being of any use in solving social problems. This does not mean the abandonment of law and order and the institution of anarchy in their place. It does mean that the affairs and relationships of men and social operations must be brought into agreement with the dictums of the physical world of reality. Technological equipment knows nothing of 'right' and 'wrong.' Your car operates just as well going the 'wrong' way on a one-way street as it does going the 'right' way.

Politics Is The Art of Balancing Opinions

Neither can an efficient social mechanism be assembled by politicians for they deal in beliefs, prejudices, opinions and traditions. Your radio cares nothing for these things. You may be of the opinion that a light bulb can be substituted for a burned out power tube in your set. But, your opinion notwithstanding, it will not work. You may believe that you can operate your radio by plugging it into any light socket anywhere. If it is an A.C. set and you plug it into a D.C. line, you will soon discover, in terms of fireworks, just what effect your beliefs have upon its behavior. Perhaps you dislike having children fiddling around the radio, fishing for horse operas or the women of the house listening to sob-

dramas. The radio knows nothing of your 'high' taste or of the 'low' taste of others. It 'gives out' with whatever is put into it and responds only to the proper manipulation of its controls, regardless of the age, sex or 'brains' of the operator. The same holds true of every other piece of technological equipment, small or large.

Neither will the philosophers ever solve America's social problem, for they deal in morals and attitudes. Technological equipment doesn't give a hoot about either of these. There's nothing moral or immoral about a machine. It's purely a question of function. A locomotive will run over an innocent ten-year old girl, if she gets caught out on a long viaduct, just as readily as it will crush any hardened old sinner. Nobody, ever yet, violated a physical law. You can entertain morals and attitudes about man-made laws, you can circumvent and violate them, but physical laws just keep on operating, willy-nilly.

Economists, bankers and business men are likewise useless in any projected solution of social problems. Economists study the pathology of debt and how to keep goods and services scarce. Bankers buy and sell debt. Business men exchange goods and services for a profit. If you have a car, it will function to the consternation of all these, whether there's a million like it on the road or not, whether there's a mortgage tacked on it or not, whether it was sold at a profit or a loss. Your car is not concerned about these things; it

merely obeys the function of its design.

Engineering Is Measurement

Only engineering methods can create all the intricate parts that go to make up an automobile and put them together in such relationships that you can hop in, step on the starter, shift the gears, press down the accelerator and speed thoughtlessly on your way. Likewise only engineering methods can draw a design for the vastly more complicated mechanism that is our social system today. In this fact lies the only probability that it will ever operate to produce and distribute all the physical requirements of the American people.

Engineering is neither moral nor immoral. It has nothing to do with opinions, beliefs, prejudices, traditions, attitudes, philosophies, etc., none of which exist in the physical world of reality. Their only place of domain is in the 'mind' and we would do well to segregate them there. We live in a physical world. The production and distribution of the goods and services necessary for our existence and enjoyment of life cannot be done by speculating on the imponderables. It is a physical problem. The engineer must of necessity deal with the facts of the world we really live in. He is trained to deal with physical things and their relation to one another. Thus, he is best qualified for the big job that must be done in America.

A few years ago the lawmakers of a certain state passed a law requir-

ing that the culvert pipes used in the construction of highways must have a circumference of exactly three times the diameter. The reason given was that $2\pi R$ was too hard to figure. Now, $C=2\pi R$ is a physical relationship *discovered* by scientists and used by engineers. Both are powerless, along with the lawmakers, to alter it. Physical phenomena are not subject to alteration by agreements among men. Consequently, to this day, all culvert pipes in that State have a circumference equal to $2\pi R$ despite the fact that it is against the law.

All attempts to apply non-physical concepts to physical things are certain to end in failure. Physical phe-

nomena majestically ignore any and all attempts to inject non-physical concepts such as 'right,' 'wrong,' 'opinions,' etc., into their operations.

The American people today face both opportunity and disaster, abundance or annihilation. Shall we apply social engineering to our way of life in America or go down to oblivion? Technocracy Inc. is the only social engineering organization in America today. It offers the blueprints and specifications for the designed operations now called for by the march of events, both in the war and in the more perilous peace that will follow.

Technocracy can afford to wait. Can you?

You Said It Brother!

'It is time for America to recognize that the job of postwar planning is being botched. We are botching the job. Congress is botching it. The common denominator of (all) planners is their conservatism. In general, they are men whose bias runs against the kind of bold and unprecedented action that we need. We need not only planning for business, but planning for the people. The postwar job is twofold: first, to bridge the gap in the flow of purchasing power during the transition period; second, to maintain that flow at full flood thereafter. Timid and piecemeal efforts cannot succeed. We cannot put 15,000,000 men to work solely by giving business the green light. The industrial machine must have gas in the tank and oil in the crankcase. It is government's responsibility to see that it runs on all cylinders in peace time as in war.' Excerpt from *Chicago Sun* editorial of May 6, 1944.

'Scientific achievements, accelerated by the war, will bring about revolutionary changes with a suddenness that will be almost unbelievable when the war is over,' according to Walter J. Murphy, editor of *Industrial and Engineering Chemistry*.

'After the war we will be in command of a productive capacity many times greater than that which we possessed a few years ago. We must never return to the philosophy of scarcity as the remedial agency for our economic ills,' Murphy said.

'Scientists . . . are releasing new products, new materials, new processes, that can and must bring a new order of life to all. Without this ability to supply the temporal needs of mankind the Four Freedoms of the Atlantic Charter will be only a futile gesture. Only when these needs are satisfied will the predatory instincts in man be stilled.' *Chicago Tribune*, March 24, 1944.

Behind the Iron Curtain

Mine Eyes Have Seen The Story

By Stella Key, 8141-14

There are millions of Americans who cannot see through the iron curtain of camouflage and propaganda of the Price System. What is on this curtain, and in front of it, is the window dressing. This is the blah that is dished up by press, radio, politics and business. What goes on behind the curtain is the real thing. This consists of the physical operations of the system. These are the measure of our General Welfare, not the baloney that is peddled out in front. Let's lift one corner of this Price System curtain and watch the Parade Go By!

Let There Be Light

What is it behind the iron curtain that our most successful people are trying to keep hidden? It is a motley array of Price System puppets marching like Fabres' procession of caterpillars, endlessly around and round in circles of futility. There march the social misfits who have not been able to achieve the 'more abundant life.' Also behind the curtain march the perennially ill, who haven't the wherewithal to buy the services of doctors. There, too, march the victims of our obsolete system of transportation. It is estimated that over 40,000 people are killed yearly on our highways alone. Scan the columns of any daily newspaper of any big city and count the number of suicides, homicides, rapes, robberies, etc. These, too, march behind our Price System curtain as part of our 'Way of Life.'

Also marching behind this curtain are the mentally defective, the emotionally unstable. Their only 'out' from the frustrations of our economic system is complete escape from reality into a dream world of their own. There they can pretend that they are everything they wanted to be, but could not.

Also marching are the petty crooks, the small time chiselers. They are the subject of countless stories, morals and

crusading district attorneys. With them also march the social and economic outcasts of free America, the negro people. Four years of civil war freed them of their slave shackles, but did not solve their economic status.

Marching side by side with them are the beneficiaries of this System of disadvantage. Their numbers are few, but their influence is powerful. They march with pomp and ceremony. They dispense charity with grandiose gestures. Walking hand in hand with the princes and the paupers are the purveyors of philosophy. They have a special brand of gobbledy gok for every human ill, real or fanciful.

I Knew Him When

By far the greatest number of the marchers are the so-called middle class. They are the solid citizens, the 'salt of the earth.' They click their tongues disapprovingly at the antics of the elite, and secretly wish they had the means to do the same. They frown enormously upon their 'inferiors,' fearing that some upstart might tumble them from their perch of artificial virtue. This is a very worm-eaten structure at best.

Aiding and abetting the marchers to keep in step are the 'smart boys,' the lawyers, press agents, advertisers and politicians. They picture with flowing terms the wonderful things

that are to be had by adopting their slogans, by voting for them, by buying their products. Mrs. Housewife will forever more be free from social embarrassment by simply using the right soap. She will be able to move about her home in perpetual leisure with the same vapid expression on her face as that of the pictured model. Mr. Husband will be able to sell to St. Peter himself, only he must get rid of his bad breath by using the right laxative.

No need for you to use your own gray cells. Just have faith and buy. The same theme, with variations, is repeated on the radio, in the movies, and plastered on the billboards. The gaudy bauble of success awaits the holder of the lucky formula. The grapes of wrath await those who have not been able to be at the right place, at the right time, and born to the right parents. Like a long train trip, Price System success is a matter of making the correct connections. If you arrive, by chance, in that rarified atmosphere of success, you must forget any humble beginning you may have had and behave in the manner of those who arrived before you and set the pattern.

How the Parade Started

The warp and woof of this Parade of Price System puppets is composed of moral concepts and ideologies that had their beginning in what is now the crumbled ruins of ancient Rome. Our system of elected representatives and our Senators are the reminders of the long dead Roman senators. The average Roman citizen was also impressed by size and waste. Here, as it was in Rome, it is a mark of distinction to be able to waste conspicuously. The old Roman economy was based upon a complicated system of human slavery. The 'free man' voted and par-

ticipated in the spoils of war. The slaves supplied the power of production of the goods and services of that time.

This structure collapsed, and in its place rose the feudal system of the Middle Ages. In order to achieve the same ends as the old Roman aristocracy, new methods had to be devised to keep the serfs working. So work was described as ennobling. Only a small minority at the top were possessed of the ability to become noble without degrading the body by physical exertion. They were able to indulge in the pursuit of the finer things of life.

There came a time when this structure of feudal slavery, too, began to crumble from dry rot within and the march of events from without.

Johann Gutenberg, in 1438, invented a mechanism that was a great stride forward, beyond the laborious method of handwriting and copying. Lo and behold, what happened? Some heretical printers dared to print brochures, books and papers that were inimical to the teachings of the self-styled saviours of the people. So the thunder was called down upon the heads of the heretics. The damage was done, however. The means of disseminating information and ideas to a great number of people was established. The Reformation of the Middle Ages was set in motion, the Council of Trent notwithstanding.

During this Golden Age of the Price System, several things happened that were to change the course of history. Christopher Columbus discovered America in 1492. England set up her own variety of imperialism, and began to bulge with small tradesmen. Commerce flourished. Colonization began. In time America became a convenient catch-all for the surplus malcontents, petty thieves and criminals. Goods and services were still produced

by human toil and hand tools. The standard of living for the great majority was extremely low. The plagues which struck Europe from time to time and the high death rate attest to that. The average span of life was 30 years. No sanitation of any kind was practiced. People in high places took to shaving their heads and wore wigs instead of their own hair. Wealth and blue blood did not buy immunity from lice.

In 1776, two events took place which were destined to change the course of the paraders behind the Price System curtain. The first practical application of extraneous energy to production was made by James Watt's single acting steam engine. In the same year, the thirteen colonies on this Continent declared their independence from England. The stage was now all set for the grand finale.

Sold Down The River of Commerce

At that time the North American Continent was endowed with the greatest combination of natural resources on earth. Coal, oil, iron ore, copper, zinc, aluminum, virgin forests, all were abundant. Climate ranged from the warm tropical regions of Central America to the temperate climate of the United States and Canada. The soil was rich in plant food for the growing of a wide range of crops.

The colonial American had no conception of this enormous physical wealth. He carefully transplanted his European mental concepts, nurtured them, and framed a Constitution to protect them. Then the effect of Eli Whitney's cotton gin (1793) caught up with the agrarian feudalism of the south. Chattel slavery became a deficit economy. The question of agrarianism or industrialism as a national policy was settled by four years of bloodshed—the Civil War.

There then arose a new aristocracy to head the Parade based on exploitation and waste of natural resources. Its motto is 'first come, first served, and the devil take the hindmost.' The native inhabitants of the Continent, the North American Indians, were killed or herded onto reservations. The great trek to the gold fields of California was on. Fertile land in the middle west was to be had for the taking. The enormous deposits of iron ore of the Mesaba Range have almost been depleted within the short sixty years of their discovery. Great pools of oil have gone the way of the iron ore. Five-sixths of our forests are gone. The treeless plains of the middle west were plowed up and 150,000,000 acres of land are now utterly desolate. The same story can be told of nearly every other resource.

The End Draws Near

In spite of this national policy for immediate personal gain, the advance of science has built an array of technological equipment that is tearing down the Price System curtain. It is exposing the sophistry that, regardless of race, creed or color, people can live in harmony in an economy of scarcity. Yes, people do live, but it has always been in mutual fear and common insecurity. This is the tyranny and regimentation of the Price System.

Technology has been the nemesis of every negative mental concept with which the beneficiaries of the Price System have tried to patch the curtain. The latest attempt was the Four Freedoms, for which World War II is supposed to have been fought; freedom from fear, and want, and freedom of speech and religion. Let's look at those elusive freedoms.

Our installed technology, if operated to its full capacity, can produce an abundance of goods and services which would guarantee security for

every man, woman, and child on this Continent from birth to death. When you have freedom from want, you will automatically have freedom from fear on economic grounds. You won't have to buy yourself into debt to keep up with the Jones. You will be free from fear that ill-health will impoverish your family. Your health will be a concern of the National Health Sequence.

As for freedom of speech, you will be able to exercise that to a greater extent than ever before. Now you don't dare tell your friends what you really think of them for trying to chisel on you, because you hope there will come a time when you might get a chance to chisel on them. As far as the public exercise of free speech is concerned, you will have more leisure time in which to practice it. The Technate will furnish the hall and/or the soap box. But you'll have to furnish the audience, and that without a price.

As for freedom of religion, that is something to be decided by each individual for himself. When the price tag has been removed from our churches, religion will be free for the first time in history. One may attend any church of his choice, seven days a week instead of the usual one, if he desires.

All In Favor Say I

Twenty miles south of Chicago's Loop in the green acres adjoining Oak Forest Infirmary is Potter's Field. On August 29, last year, 150 unknown and unidentified babies were buried there, in a trench. 'Every three weeks we bury about 30 adults and 100 babies,' said J. C. Rush-ton of the administrative office of Potter's Field. (*Chicago Daily News*, August 30, 1946.)

If any one doubts that our technology can produce an abundance of goods and services, let him cast his mind back to the last war. North America was the arsenal of the whole world. We poured out goods of destruction like grist out of a mill. We can do the same in peacetime for construction, but we must take off the brakes of outmoded institutions. We must scrap the Price System and install technological social controls.

We have reached the pay-off point. Which will it be, the private enterprise of the nineteenth century, with nowhere to go but complete prostitution of natural progression? Or, will it be a functional society based on engineering methods? We have reached that latter point in our progression. The next step is straight into the New America of Abundance, with security and equal opportunity for all. The blueprints are ready, ladies and gentlemen. The best part of it is they won't kid you either, or try to sell you insurance, or anything else you don't want.

Technocracy isn't kidding either. It has the blueprints of a scientific social system. Don't believe this. Investigate for yourself. Join Technocracy and check up on the facts!

'If the underprivileged children had an alumni association, I could be their president. But I wouldn't because there is no such thing as being underprivileged if you have the privilege of being an American citizen.'—Robert R. Wason, President of the National Association of Manufacturers for 1946. (As quoted in the *Kansas City Kansan*, December 1, 1945.)

Ed. Note: All in favor of this glorious free enterprise social system say 'I.'

So Wags the World

Fascism (Social Reaction) and Anti-Fascism (Technology)

By Research Staff Great Lakes Technocrat

NORTH AMERICA

U.S.A. (Social Reaction)

'Liberal minded' congressmen, educators, 'sociologists' and both the C.I.O. and A.F.L. have endorsed the Mead-Aiken Federal Aid to Education Bill (S. 717), still pending in Congress.. The bill would appropriate \$300,000,000 annually to the schools of the U.S., including parochial schools of all denominations, 'for the construction of buildings, transportation, libraries, textbooks, health programs and other projects.' Evidence brought out in hearings on S. 717 shows that five-sixths of all non-public schools in the U. S. are sectarian Catholic (Roman) schools.

Ostensibly designed to raise the level of education, the bill actually aims to revert mass education backwards to the pre-1791 system, and put it again under clerical auspices supported by the State. Separation of Church and State has been, from the beginning, one of the basic tenets of American civilization. For the first 119 years of our National history, only one State enacted a law requiring Bible reading in the public schools. Today 12 States have statutes requiring it and 7 permitting it.

The reversionary movement developed largely after World War I under the influence of various Protestant fundamentalist sects, the Ku-Klux Klan, and the Catholic (Roman) Church. Of these groups the Catholics (Roman) have been the most persistent in attempting to turn the clock back. Paul L. Blakely, S.J. in his book *'May an American Oppose the*

Public School?' states that a Catholic (Roman) 'can find no tolerance for the opinions that education belongs primarily to the civil power, that the schools belong to the state.' The book bears the imprimatur of the late Cardinal Hayes. Canon 1374 of the Catholic (Roman) Church states: 'Catholic children must not attend non - Catholic, neutral or mixed schools; that is, such as are also open to non-Catholics.'

The American free, non-sectarian, public school system has been called 'the greatest cultural achievement of the United States.' It took a long struggle to establish it. One of the first victories was won by James Madison and Thomas Jefferson. In 1784 Patrick Henry introduced a bill in the General Assembly of the Commonwealth of Virginia to 'establish a provision for teachers of the Christian religion.' Madison opposed it and declared it 'obnoxious on account of its dishonorable principle and dangerous tendency.' He wrote a leaflet against Henry's bill entitled *A Memorial and Remonstrance*. Here is a quotation from it:

It is proper to take alarm at the first experiment upon our liberties. We hold this prudent jealousy to be the first duty of citizens, and one of the noblest characteristics of the late Revolution. The freemen of America did not wait till usurped power had strengthened itself by exercise, and entangled the question in precedents. They saw all the

consequences in the principle, and they avoided the consequences by denying the principle.

Madison's warning defeated the bill and brought about the passage of Thomas Jefferson's 'Act for Establishing Religious Freedom.' This Act became the basis for the complete separation of Church and State in regard to the public school system. The first amendment to the Constitution went into force in 1791.

Since the above was written S. 717, after extended hearings in the Senate Committee on Education and Labor, was reported back unfavorably to the Senate. Senators Mead and Aiken got busy and put a second and similar bill into the Senate hopper on May 16, 1946. It is numbered S. 2207. The provisions of S. 2207 are 'involved, complicated, and insidiously worded' so as to circumvent the first amendment to the Constitution and the Constitutions of the several States. The motto of pro-fascism is 'If you don't succeed at first, lie, lie, again.'

U.S.A. (Technology)

A small distillery about as big as a kitchen stove turned out $7\frac{1}{2}$ gallons of 95 percent alcohol daily from 3 bushels of corn at the National Chemical Exposition held recently in Chicago. The unit is the product of Joseph E. Seagram and Sons, Inc., distillers. The equipment is a continuous process unit and is said to be almost a miniature of Seagram's big distillery at Louisville, Kentucky. The implications of this development are various and important. Technology is taking another step forward along the following lines:

- a. In compensating for the depletion of petroleum reserves;
- b. In providing a way to eliminate

the waste of farm products involved in fruit and grain spoilage by converting it into fuel;

c. In making mechanized agriculture more self-sufficient, less tenuous and less dependent on other industrial sequences;

d. Providing a means to prevent the complete collapse of food production with attendant mass starvation in the event of prolonged social violence with its disruption of flow lines which might accompany the collapse of the Price System.

Of course, this is predicated on the wide adoption of the development. Nevertheless, the potentialities are there.

The little unit is capable of turning corn into alcohol in 11 hours, compared to a fermentation cycle of 48 to 60 hours in commercial distilleries. The shorter production time is the result of a new step in the fermentation cycle, called 'acid hydrolysis.' The operations go something like this.

Grain is ground to desired fineness, then mixed with warm water and sulphuric acid to make a mash. The acid acts in the place of malt to convert the grain starches into sugar. The acid mash is then pumped into a steam jet heater, where it is instantly heated to 350° F. by steam. It is held there long enough to finish cooking and convert the starch into sugar, about three minutes. The mash is then cooled to 212° F. and its acidity adjusted with calcium carbonate. After being cooled further to 85° F. it is pumped into the fermenter and inoculated with a pure yeast culture. After fermenting the mash is pumped into the distillation system and the alcohol drawn off.

The stillage (leftovers) makes excellent cattle and hog feed, either wet or dried. Only the carbohydrate por-

tions are used and the nitrogen and minerals are returned to the soil in feed or fertilizer. So far only corn has been used in the still. It is said that it would even be easier to distill cull fruit, sweet potatoes and sugar cane since there would be one less step in the process because fruits already contain natural sugar. Corn yields around 150 gallons of alcohol per acre, sugar cane 400 and sweet potatoes 500.

During the war, the Seagram Company designed a larger mobile distillery built on five railroad cars to convert farm products into alcohol. It is now

working on a box car unit that can produce up to 2,000 gallons a day. Straight alcohol cannot be used in present type engines efficiently. However, International Harvester Company has adapted tractors to use alcohol by equipping them with high compression pistons and changing carburetor floats from cork to metal. The Scania Manufacturing Company of Arlington, New Jersey, has designed a new type engine for use with alcohol. It is said to employ two opposing pistons in one cylinder. Chemurgic experts are enthusiastic about the Seagram process.

ASIA

Philippines (Social Reaction)

When the Axis Pact of Fascism was crushed and the several Governments-in-Exile restored in their respective countries, steps were at once taken by them to punish traitors. Norway, Holland, Belgium, France, Italy, Yugoslavia and other countries rounded up the quislings who had collaborated with fascism and dealt with them as they deserved. This happened in nearly all the countries invaded by the Axis, all except the one Nation that brags about being the most Democratic of all, our own country, the good old U. S. A.

This great nation, whose technological power defeated the fascist conspiracy, is also the only country that, instead of punishing its collaborators, actually elevated them, almost en masse, to the highest offices in the land. This happened in the Philippines. Please remember that up until July 4, 1946, the Philippine Islands were a Colonial possession of the United States and as such an integral part of its sovereign territory.

The kingpin quisling of the Philippines is Manuel Roxas, the President. When Roxas was captured by the Japanese, he wore the uniform of a Brigadier General of the United States Army. The Japanese carefully transported him by plane to his beautiful home in Manila. Two Japanese physicians were flown from Tokio to minister to him. He was offered the position of President of the Japanese puppet government in the Philippines. He refused this, but did accept the position of Chief of the Economic Planning Board which furnished Philippine supplies to the Japanese. He helped to write the Constitution of the puppet government. He was a close adviser of Jose Laurel, the puppet President. And—as a member of the puppet cabinet, Roxas **SUP-PORTED** a declaration of war by that government against the United States of America. Today, this fascist is President of the Philippine nation, which attained its independence on July 4, 1946.

Not only that! Unbiased reports

from foreign correspondents estimate that about 80 per cent of the Officers in the Philippine Army today are ex-quislings who collaborated with the Japanese; seven of the nine members of Roxas' cabinet are feudal landlords; the Supreme Court is loaded with ex-quislings; most of the Manila newspapers are controlled by men who served the Japanese as propagandists; and from 30 to 40 percent of the Congress are former collaborationists, who were in the puppet congress. To cap it off, these political-fascists recently passed a bill extending their own term of office and voting themselves *full back pay* for the years of Japanese occupation.

How this stinking mess arose is far too long a story to tell here. The causes go back to 1565 when Spain conquered the Philippines and introduced its unique clerical-landlord, hacienda type of fascist culture. By far, the largest part of the land is owned by a few families. The Catholic (Roman) Church is one of the largest landowners. American corporate enterprise also has large holdings in the Philippines. The Elizalde family and the Lopez, Lizares, Hemady and Soriano families are the top owners in the Philippines. Before the war, Manuel Roxas was Chief Attorney for the Soriano interests. Andres Soriano is an admitted Falangist, who served as Franco's honorary Consul in the Philippines. He is now a Colonel in the U. S. Army, and along with Mike Elizalde a member of Five Star General MacArthur's staff.

The tentacles of world fascism spread over 5/6ths of the globe. They reach even into the innermost offices of the United States Government. That fact is what made the rebirth of fascism possible in the Philippines.

'They planned it that way.' Here's how it was done. Under the original National Defense Program, the Office of Emergency Management was set up. This was a framework within the President's Executive Office, within which several civilian war agencies were established to further the defense and war program. Among these was the Office of Lend-Lease Administration, established October 28, 1941. On September 25, 1943, Lend-Lease was incorporated into the newly set up Office of Foreign Economic Administration (FEA) with Leo T. Crowley as administrator. The FEA is the body which gave force to the decision that the status quo should be restored in the Philippines after the war. The actual sponsors of the decision stand back in the shadows where the white light of publicity seldom beats.

They dictated that after the war, *all civilian goods shipped from the U. S. A. to the Philippines would have to be shipped to the same firms that received the same goods before the war, and in the same proportions.* This was calculated to restore the status quo ante in the Philippines. It has worked beautifully. Minutes of the F.E.A. meeting at which this policy was adopted circulated in Manila before the Japanese surrender in August, 1945.

Thus 400 years of fascist culture has been revalidated in the Philippine Islands. The Spanish feudal landlords are very happy about it. The smug clerics chant its praises. The politicians are all set to play ball. American Corporate Enterprise is licking its chops at the prospect of fatter profits from Philippine resources. Yes, everybody is happy about the status quo, everybody except the people. They don't want it!

Flashes of American History

No. 3—Jefferson and the Louisiana Purchase

By Ben H. Williams, 8141-15

THOMAS Jefferson was a man of 'parts.' Co-author of the immortal Declaration of Independence; author of the Virginia and Kentucky Resolutions, including a provision for the abolition of chattel slavery; chief proponent of the Bill of Rights (the first ten amendments to the Constitution); gentleman farmer; amateur archaeologist; and founder of the great Washington and Jefferson University—he also deserves the appellation of 'astute politician,' so far as it is possible for a politician to be astute in the maelstrom of a rapidly changing world.

Sneered at by his Federalist opponents as 'a loose thinker,' 'a visionary,' 'a cowardly trimmer,' and as the possessor of other undesirable qualities according to the viewpoint of the New England would-be aristocrats and of the rising commercialists of New York, Jefferson, in the history of the first two decades of the nineteenth century, shines out above his contemporaries like a star of the first magnitude. These very qualities of a 'dreamer' made for a flexibility in the field of practical politics that proved indispensable in the situation prevailing at the beginning of the last century.

According to the National Encyclopedia, 'the political people, in Jefferson's views, were the holders of real estate; he regarded an agrarian democracy, as opposed to government favoring financial and urban classes, as the one healthy type of government.'

The America of 1800

Jefferson's outlook for the United States in 1801 when he became President through an accident (the House of Representatives having to decide a tie vote of the electoral college between him and Aaron Burr), was one of the great possibilities for the distant future of an agrarian democracy. At that moment, however, our country appeared as a vast wilderness, sparsely settled, without highways, with no means of communication between sections of the interior except by horseback or by slow stage over often impassable trails. The census of 1800 counted a total population of about 5,000,000 with only a few thousands west of the Alleghanies in Ohio, Kentucky and Tennessee. Diverging sectional 'cultures,' from the original British stock, were shaping themselves in New England, in the Mid-Atlantic States, in Virginia, in the Carolinas, and among the pioneers who were slowly occupying the territory westward toward the Mississippi. Spain was still in possession of East and West Florida, and of the territory west of the Mississippi from near the Canadian line to the southernmost limits of the Continent. The outlet to the Gulf at the mouth of the Mississippi—America's 'own street door'—was controlled by and at the mercy of a foreign government. This last-named circumstance was of prime significance, in Jefferson's view.

While settlement of this territory by our people would be slow and, according to Henry Adams, 'even Jef-

ferson, usually a sanguine man, talked of a thousand years with acquiescence, and in his first Inaugural Address, at the time when the Mississippi River formed the Western boundary, spoke of the country as having "room enough for our descendants to the hundredth and thousandth generation" — nevertheless the United States must somehow and at that very moment get control of its 'own street door.' Otherwise, Jefferson, with a horror of wars and of mixing in foreign affairs, perceived the probability of events that might at any time involve the United States in international complications and lead to entangling alliances.

How the United States Got A Bargain

So, when the news reached the government at Washington in 1802, that Spain the year before had by a secret treaty ceded back to France the territory, including that on both sides of the Mississippi at its mouth, Jefferson was greatly concerned. The President at once communicated with Livingston, the American ambassador at Paris, empowering him to open negotiations with the French government for the purchase of the small area controlling the outlet of navigation. Livingston was empowered to bargain to the extent of about \$8,000,000 for the desired territory.

Circumstances not only favored the negotiations, but carried them far beyond the original intent. The decision rested with Napoleon Bonaparte, who at the time of the retrocession which he had wrested from Spain by force, planned to occupy the Louisiana territory with French troops and settlers. Before his plans could be initiated, however, Napoleon found it imperative to renew his war with Great Brit-

ain; and realized that he could not hope to hold the territory against the British fleet. Rather than let it fall into the hands of his enemy, and needing money for his war, Bonaparte ordered his minister Talleyrand, to negotiate with Livingston for the entire Louisiana territory, an area of over 900,000 square miles and out of which have since been formed the States of Louisiana, Arkansas, Oklahoma, Missouri, Iowa, Kansas, Nebraska, Wyoming, Montana, North and South Dakota, with a great part of the States of Minnesota and Colorado. Talleyrand offered the whole area, with somewhat hazy and undefined limits, to Livingston for \$15,000,000.

Jefferson Overrides the Constitution

The reaction to this offer is thus described by F. W. Hirst:

Great was Jefferson's joy when the despatches of Livingston and Monroe arrived at Washington. But with joy, embarrassment was mingled; for the Constitution made no provision for holding foreign territory, nor for incorporating foreign nations into the Union; and certainly did not invest any such power in the Executive. At first the President desired an amendment to the Constitution authorizing the purchase, and indeed drafted one for the purpose. But Livingston and Monroe assured him that delay might be dangerous — for Napoleon might at any moment change his mind — and Jefferson had to weigh the national interest against Constitutional propriety . . . Accordingly he summoned Congress to a special session in October. The Senate immediately ratified the treaty, and

the House voted an issue of bonds to pay for the new territory. The only protests came from a small group of Federalists, who denounced the treaty as 'unconstitutional' and questioned the validity of the title.

Jefferson, by this act, completely abandoned his hard-gained position as the champion of 'strict construction' of the Constitution, and openly admitted that he had made of that document little else than a piece of paper. The year following, according to Hirst, 'a further strain was put upon the doctrine of strict construction by an Act of March, 1804, providing for the government of the new territory, whereby it has been said the President "stepped into the shoes of the King of Spain." He was empowered to appoint the Governor, the law-making council, the superior judges, and in fact to construct the whole machinery of administration, legislative, executive, and judicial, while the inhabitants for the time being were allowed no participation in the Government.'

Thus did Thomas Jefferson, when confronted with an emergency of major significance, with vision transcending that of his contemporaries, overcome his scruples regarding 'strict construction' and, by a stroke of the pen, without war or any serious social disturbance, double the area of the United States and eliminate a multitude of probable future inter-

national complications. Jefferson appealed over the Constitution to his agrarian constituency and their approval was emphatic. Whereas, in 1800, Jefferson had been chosen by an accident, in the election of 1804, he received an overwhelming mandate from the American electors. The fact that, before the end of his second administration, events became too complicated even for his genius, is immaterial at this point. America in 1803 was fortunate in having a politician of Jefferson's astuteness at a time of such significance for its future destiny.

Thomas Jefferson did not reckon with the technological factor in his forecast of 'room enough for our descendants to the hundredth and thousandth generation.' Only 90 years later the U. S. territorial frontier had vanished beyond the Pacific coast, and the area which he had bought for a song had become the stamping ground of the last and most widespread agrarian revolt in the history of America.

Some of the forces and events leading up to this will be touched upon in our next 'Flash,' under the title, 'De Witt Clinton and the Erie Canal.'

..References on 'Jefferson and the Louisiana Purchase': Stripped of its philosophical verbiage, a fair picture of the main physical and social features of the America of Jefferson's day may be found in Henry Adams' 'History of the United States,' volumes I and 2. Also in these volumes is a good account of the details surrounding the Louisiana Purchase. Another work of interest on the subject is F. W. Hirst's 'Life and Letters of Thomas Jefferson.' Further research will find available a vast number of documents in our public libraries.

Two and Two Makes 'Free'

A *Chicago Daily News* account of July 20, 1946, relates that the San Francisco mint has collected two tons of the zinc pennies which are being retired from circulation. It appears that the local junk dealers are not interested in melting them

down so they are to be dumped in the bay. The Department of Interior stated recently that there is less than a 35 year supply of zinc ore left in the U. S. Add two and two and you get the meaning of the 'free' in free enterprise.

Is Peace A Worse Menace Than the Atom Bomb?

By T. Swann Harding

Senior Information Specialist, U. S. Dept. of Agriculture

(Condensed from *Frauds and Answers Magazine*, La Crescenta, Calif, May, 1946)

The Era of Transition is upon us even before we have adjusted ourselves to it psychologically. Millions of young Americans now are being deprived of the security, freedom and restraint, and exemption from responsibility characteristic of the armed forces, in order to accept the insecurity and the restraining responsibilities of civilian life. Whereas their way had been smoothed, their wants foreseen, and their position secure, they return to the disorganization and constant exacerbation of day-to-day life, sans esprit de corps, sans uniforms, sans fixed positions, sans glory.

Obviously such a transition would be difficult at any time. It is rendered more difficult now when civilian life itself must be so reoriented as to permit widespread unemployment and restricted production.

Meanwhile these young people have fallaciously idealized the civilian life they left behind, just as now they will begin to idealize their life in the armed forces. For man tends always to idealize past or remote conditions; the discomforts of which he can forget, while concentrating upon their more alluring aspects. To accustom these former favored members of our society to the dull monotony and stark uncertainty of everyday life here at home is a very delicate problem requiring great patience and tact.

To do this under adverse economic conditions will be doubly hard. Warfare is the greatest mental and emo-

tional stimulant known to man. It is the finest instrument yet devised to accelerate the processes of research and invention, and to produce and maintain prosperity under existing economic and technical conditions. The floodgates of credit are opened, sound money disappears into vapor, and even bankers themselves become enthusiastic about fiat currency.

Because we could fearlessly create the money we needed out of nothing, we were able not only to support a huge war effort, but also to make useful and important members of society out of our aged, infirm, physically handicapped, frustrated and unsuccessful citizens. The misfits were fitted in. Each had become an important member of a society animated by great unity of purpose—the total destruction of our enemies.

Riches spread over the nation. We had to save because we were compelled to buy less. We had to live more simply, more healthfully, and more sanely, both within and outside the armed forces. We had to feed the rich less and the poor adequately. Our morale heightened because patriotism invigorated us, and nothing so stirs a nation to progress as the opportunity to destroy life and property in other nations.

Everybody went to work. Income and goods were better distributed than at peace. Of course there were those who insisted that warfare involved the prostitution of scientific knowledge

which, they held, should be utilized instead to promote culture, enrich civilization and effect the progress of mankind the world over. That could, it is true, absorb its possibilities quite as well as war. But since we would not make such use of science, global war came inevitably.

Scientific knowledge had to be used by someone somehow. Since our scientists quite generally renounced the job of directing its wise use at peace, the predatory and avaricious stepped in to use it unwisely. This brought on the war because it produced widespread technological unemployment and a disorderly social economy. However, global war is a logical adjustment to technological progress, if less violent adjustments are prohibited.

For one it makes use of many individuals of both sexes for whom we refuse to find a place while at peace. Of thousands of these it disposes permanently. At peace we often deprive as many thousands, even millions, of all economic functions in our society. Undoubtedly they suffer much more as members of our normal peacetime 'underprivileged' classes than they do in the armed forces, even when making the so-called 'supreme sacrifice.' However, many of them do not make this sacrifice for, if too many made it, war would not be the success that it is.

These survivors now seek a place in our society right at the time of contracting opportunity. Too few of us have stopped to understand the tremendous implications of our own technological progress. The 1940 level of peacetime production could now be attained—using the latest techniques—while leaving fifteen or twenty millions unemployed. Is that what veterans are in for?

Our industrial output grew enormously in the forty years between

1899 and 1939, but we were using only 47 workers per unit of output in the latter year, as compared with 100 in the former. Jobs for the other 53 workers had been annihilated. Despite shortened hours and work weeks, industrial productivity per man-hour tripled during the period mentioned. Output per worker doubled, due to technological advances. Fewer workers were employed fewer hours in 1929 than in 1919.

What was true of industry was also true of agriculture. Between 1900 and 1940 our farm output rose 60 percent, but farm employment per unit of output dropped almost one-half. By 1940, farm employment had declined 16 percent below the 1900 level, and the decline has increased, along with increased production, during the war years. Today the smallest farm work force in many years is producing record crops which will result in the horror of over-production tomorrow, unless industrial production is maintained at capacity.

What planned means have we of curbing monopoly, forcing capacity production for expanding peacetime consumption, making scientific adjustment to technological progress, financing increased consumption among low-income groups, and thus deriving peak economic and social service from our industrial and farm plants? Had we had a government agency which dared plan so constructively, it would have been abolished. The National Resources Planning Board, which was conservative in the extreme, was abolished.

The patent alternative is perpetual warfare.

It would require relatively little social conditioning, too, for us to adapt ourselves quite pleasantly to a life based squarely upon mass murder,

arson, and mayhem, rather than upon carefully camouflaged pressure exerted on the underprivileged, which produces slow death via malnutrition and neglect, along with poverty and squalor. To make life and science tolerable it looks as if we must resort to continuous warfare.

This sounds ridiculous or harsh merely because it is rational suggestion made in an irrational society. We naturally shy away from thinking realistically in such a society. But the idea marks no sharp deviation from the past behaviour of the human race. It has spent more years at war than it has at peace and its wars have always been for noble objectives. Those who have made war have always been honored and praised.

Human beings have never in their history seriously sought to avoid warfare.

The world's entire history has been one of blood and destruction in which religious motives have often proved most productive of belligerency.

While at peace man has so sabotaged technology for price maintenance that no nation has ever yet adequately fed its entire population, while more than two-thirds of the human race habitually faced destitution. Some more rational adjustment must be made if we are to utilize scientific knowledge efficiently. Shall it be perpetual warfare, or shall we use our brains and come by that adjustment the hard way, at peace?

Constructing Chaos

"... the whole construction industry has long been plagued with illegal trade restraints which keep prices high, and resist the entrance of new processes and techniques."

been utilized in the home construction industry. The anti-trust division's activity in lumber, masonry, cement and

"Mass production methods have not plumbing has revealed the existence of flagrantly restrictive practices.

"These four items represent more than two-thirds of the cost for materials in an average house.

"Consumers have been forced to bear elements of 'phantom freight'; products are distributed through a controlled system of jobbers selling at agreed-upon prices and building codes discriminate against cheaper and more efficient materials, such as prefabricated products."—Assistant Attorney General Wendell Berge in a release to the press quoted in the *Chicago Sun*, June 18, 1946.

* * *

In 1941, the 3,100 dental laboratories in the United States employed

15,250 dental technicians of whom
7,700 were drafted and replaced by
8,900 less efficient but now active workers.

9,500 more dental technicians were trained by the Army,

Making a total of
33,650 trained dental technicians for only

16,000 jobs.

According to these figures, the field already has two trained workers for every job.—*Chicago Times*, February 2, 1945.

Between 1836 and 1943 there were 2,880,608 patents granted in the U. S. Great Britain granted only 1,401,221 in the same period. At the present time there is a backlog of 120,000 applications pending in the Patent Office. Cheer up, 'free enterprise' can't bury all of them.

Flashes of American History

VIII—An American Introduces the Sewing Machine

By Ben H. Williams, 8141-15

In the spinning and weaving of textile fabrics giant strides in mechanization had been made long before anything analagous had taken place in the machine fashioning of these fabrics into clothing. In fact, it was largely in spinning and weaving machines that the so-called Industrial revolution began in the British textile industry about the middle of the 18th Century.

For nearly a hundred years thereafter the making of clothing was still a household or small factory hand-industry. The 'nine-lived' tailor, 'round-shouldered and bow-legged,' still sat cross-legged on his bench or his legless chair, plying his needle and shears day after day. Well along toward the middle of the nineteenth century, Thomas Hood could still have the household clothing maker singing 'The Song of the Shirt':

'With fingers weary and worn,
With eyelids heavy and red,
A woman sat in unwomanly rags,
Plying her needle and thread.
Stitch! Stitch! Stitch!
In poverty, hunger and dirt,
And still in a voice of dolorous pitch,
She sang "The Song of the Shirt".'

Holding Back The Machine

And yet for all that, the beginnings of invention in clothing machinery date back almost as far as those in spinning and weaving devices. Reverend William Lee, late in the 16th century, invented a knitting machine which, however, was suppressed by Queen Elizabeth of England who refused Lee a patent on the ground that 'many thousands of her liege subjects who made stockings and hose would be forced out of work.' Thomas Saint

patented a sewing machine in England in 1790, but it was classed as a mechanical toy and never came into public use.

Forty years later, in 1830, Bartholomey Thimmonier was granted a patent for a sewing machine in Paris. In 1841, Thimmonier's machine made uniforms for the French Government by the thousands. Then the tailors got together, formed mobs, invaded the factory where the machines were in operation, threw them into the street, and burned them up. Again in 1848, this inventor's machines were burned by mobs of clothing workers. Thimmonier finally gave up and died in bitter poverty. On this side of the Atlantic, the sewing machine was introduced first by Walter Hunt of New York, about the year 1832. Hunt's great achievements were the lock-stitch and the eye-pointed needle. Hunt was too easy-going and failed to patent his invention. He made no attempt to fight the opposition to its introduction by the tailors and other clothing workers.

The Winner Shows Up

The achievement of actually bringing the sewing machine into the field and keeping it there was reserved for an American pioneer of a sturdier type. True enough, he arrived on the scene at a time when social necessity was urgent and so aided him greatly in overcoming opposition. The American inventor was Elias Howe, Jr., the son of a Massachusetts farmer who, as one biographer intimates, had implanted in his son 'a heart of steel.'

Howe began work on a sewing machine about the year 1840 and after

unbelievable mechanical and financial difficulties, patented a successful machine in 1845. But, according to John Walker Harrington, 'when Howe tried to get the big clothing establishments to use the machine he found out exactly where he stood; the howl of the tailors echoed to the Bunker Hill Monument.'

Howe then borrowed money for a trip to England where he encountered an enterprising chiseler named William Thomas, who bought one of Howe's machines for \$1,250 and with it all the patent rights of the new sewing machine for Great Britain. Howe was given a \$15 a week job in Thomas' establishment and continued his experiments for eight months, when he was kicked out, imprisoned for debt, and finally got back to New York, learning on his arrival that his wife was sick in Boston. He arrived at her bedside only a few days before her death.

The Machine Comes Into Its Own

Social necessity meantime had forced the sewing machine into greater usage, and Howe spent the next few years fighting the infringements on his patents and collecting royalties on his machines. Up to 1860, Howe had received \$1,185,000 on his machine and so great was the disparity between that sum and what other promoters had gotten out of his invention that Howe thought he should have received at least \$150,000,000.

Elias Howe was only an inventor, demonstrator and indifferent salesman of his machines. He never had a factory of his own. He lacked the promotional genius of men like Isaac Merrit Singer and others who made the big fortunes out of the sewing machine. Nor was Howe's machine perfect. Many improvements were made by Singer and others who followed, even as Howe

himself had borrowed consciously or unconsciously from his predecessors.

The sewing machine, like McCormick's grain reaper, played a significant part in the Civil War, by supplying the Union Army quickly with uniforms, knapsacks, etc. Again, during the World War, as Harrington tells us, 'many improvements in existing machines were made at that time. New types of buttonholing, seaming, seam-closing, fronting, pressing and labelling came into being as if born of the needs of the hour.'

Following the successful introduction of the sewing machine by Elias Howe, the making of clothing was swiftly brought to a level of speed and efficiency equal to that of spinning and weaving. Modern high-energy civilization would be seriously handicapped without the sewing machine.

The next 'Flash' will treat of a revolutionary development in communication under the title 'An American Professor Brings the World to Our Doorstep.'

References:

Waldemar Kaempffert, 'A Popular History of American Invention,' Volume II: 'Making Clothes by Machine,' by John Walker Harrington; Mary R. Parkman, 'Conquests of Invention,' pages 87 to 103.

Buried Alive

'One of the principal threats to interest rates is the large number of undeveloped patents on corporation shelves—patents that corporations are not developing now because of their potential threat to present invested capital.'—Harland H. Allen, Chicago economist in a recent talk before the Mortgage Bankers Association of America. (As reported in the *New York Times*, March 2, 1947.)

Flashes of American History

VII—Kelly Makes a Discovery in Steel

By Ben H. Williams, 8141-15

When Andrew Jackson came out of the Tennessee wilderness in 1829, his long and tedious journey to the White House had to be made by horseback and stage. And yet this doughty protagonist of rural self-sufficiency of an ox-cart era was about to do battle Quixotic-like with physical and social forces of a new and dynamic character. The United States was on the threshold of the Machine Age—of a technological advance in industry and agriculture that very soon should render Jeffersonian and Jacksonian 'democracy' and all other ox-cart concepts not only obsolete but dangerously 'reactionary.'

Some Retarding Physical Handicaps

In the 30 years following Jackson's inauguration, America emerged a considerable distance out of her rural and sectional isolationism into a daily-changing world of canals, railroads, steamships, textile factories with improved devices, clothing factories with sewing machines, farms with grain reapers and other implements and along with these, an oligarchy of bankers, railway promoters, and industrial enterprisers of all categories to keep pace with expanding industry and commerce.

Apart from this, however, the history of technology shows in many instances how advance in a given direction is often halted or retarded by want of some contributory device or invention. As previously noted, for example, notwithstanding the revolutionary applications of machinery in the British textile industry up to the last decade of the eighteenth century, 'the arch of that industry still lacked its keystone'; an adequate supply of cotton. Whitney's cotton gin in 1793 was the answer to that problem. In another instance, the clothing industry was doomed to remain a small household affair until the sewing machine about the middle of the last century

initiated a similar expansion through the large factory system.

In the aforementioned period, from 1830 to 1860, the Machine Age was seriously retarded for want of an efficient and speedy method for quantitative production of steel. Known methods of smelting iron ore and converting the cast iron into malleable iron or steel involved a lot of reprocessing of small quantities at excessive energy and money costs. The urgent necessity of over-coming this handicap was recognized in Great Britain and the United States. Railroads needed better rails and more of them; machine and hand tools were costly and inefficient; the type of steel required for Deere and Oliver plows was extremely expensive and difficult to obtain.

A Simultaneous Discovery

Two men of an inventive turn of mind—a Britisher engaged with the improvement of war munitions, an American with the making of iron kettles—independently hit upon the discovery of converting pig iron directly into steel. The credit for the discovery has gone to the Englishman—Sir Henry Bessemer—and bears the familiar name of the Bessemer Process. But William Kelly, a Kentucky 'hill-

billy,' really made the discovery several years ahead of Bessemer.

In his plant near Eddyville, Kentucky, about 1846, says L. W. Spring, Kelly invented a process for making large sugar-boiling kettles for the Southern planters, and in seeking to make better and cheaper wrought iron for his kettles, he discovered the same process as Bessemer—that a steady blast of air alone would refine iron and convert it into steel. Ironmakers laughed at the idea, Kelly's father-in-law threatened to withdraw money from his ironworks, and his customers, hearing that he had a "new-fangled way of refining iron" insisted that they wanted iron in the regular way or not at all. Then the ore supplies near his ironworks gave out. Despite these difficulties, he worked on his process in secret, built a converter in 1851 at the Cambria Iron Works, in Johnstown, Pennsylvania, and hearing of Bessemer's process, patented his converter in 1857. Some authorities give Kelly credit for being the first inventor in this field.

Nor did Bessemer meet with smooth sailing in the introduction of his new process. Iron makers who first tried his method failed to get expected results. The steel they produced was brittle. Lacking scientific knowledge, these manufacturers were helpless in determining the cause, and rejected Bessemer's invention. So Bessemer set out to prove that he was right. He found that the iron he used in his experiments had a low phosphorous content. That produced good steel. The iron used by his customers had a high content of phosphorous, which accounted for the brittleness of the steel product. Having thus discovered the cause and the remedy, Bessemer found himself still unable to interest the manufacturers in his process, until after he had built himself a plant and demonstrated his method beyond a

doubt. Eventually the process came into general use throughout the industrial world, only to be superseded in large part by the open hearth method of a later date.

It is unnecessary here to give a description of the Bessemer-Kelly process. Our readers are urged to get a copy of L. W. Spring's 'Story of Iron and Steel' and read the dramatic account of how Bessemer made the discovery in 1856. Spring closes his story with this observation:

Bessemer was the father of the steel age. Without him there might be no transcontinental railroads, no skyscrapers, no great bridges, ocean liners, or Panama Canal. In the development of the industrial world as we know it today, he stands next to Watt, the inventor of the steam-engine.

Meanwhile, at this point in American history, the several streams of technological development begin to converge into one mighty river. The individual achievement becomes less noticeable in the larger current; the individual inventor or technologist is about to become a mere attache of the entrepreneur, who in turn is about to lose his character of 'rugged individualist' and to become a mere cog in the giant corporation and holding company of the twentieth century. Technology marches on the double quick!

Before we pass on to the Power Age, let us tarry awhile longer in the early Machine Age and view some more outpourings of the smaller streams of technological development in America. My next 'Flash' will treat of the subject, 'An American Introduces the Sewing Machine.'

Reference:

Waldemar Kaempffert, 'A Popular History of American Invention,' Volume II, Chapter I: 'The Story of Iron and Steel,' by L. W. Spring.

Flashes of American History

VI.—A Virginia Blacksmith Constructs
a Reaper

By Ben H. Williams, 8141-15

The American rural economy in 1830, when canal-building was at its peak, and railroads in their initial stages of experimentation, was still fundamentally the same as at the beginning of colonial settlement. Our farmers were using ox-teams and iron plows with wooden moldboards; crude harrows; hoes, hand rakes and other aids to primitive cultivation. Grain was sown by hand and the harvest reaped with sickle or with the cradle, and meadows were mowed by the scythe. Threshing was done with the flail or with oxen treading out the grain on the barn floor. The individual farms, as near as possible, were self-sufficient. That is, each farmer produced his own food and stored as much as possible for the off-seasons; raised sheep with wool required in clothing for his family; cut his fuel and material for buildings from his woodlot, and exchanged a few of his products with neighbors largely on a barter basis. It was an economy of natural scarcity, requiring unceasing toil by all members of the family the year around.

Beginnings of Fundamental Change

BUT at the very moment, dynamic changes in the American agricultural scene were impending—unperceived, however, by all but a handful of our people. The newly settled areas of the Middle West—broad, fertile, and better suited for grain growing than those of New England and the Mid-Atlantic States—were meeting often with insurmountable difficulties at harvest time, due to the primitive hand methods. Improved transportation was running ahead of technical facilities on the Western farms, and big crops of grain often were left in part unharvested.

Invention stepped on the heels of this necessity. One day in July, 1831, a farmer boy in Virginia wheeled out of his blacksmith shop a strange device and announced to his neighbors that he was going to make a demonstration of a more-efficient method of reaping grain. That young blacksmith farmer was Cyrus Hall McCormick whose father, Robert McCormick, had spent many years trying

to perfect a grain reaper and had finally given it up as a hopeless dream. The son had succeeded where the father failed, and the former was now ready for the demonstration. Exactly one hundred years later, the grandson of this young Virginia blacksmith wrote of the event:

"Modern agriculture was born in Virginia on a hot July day in 1831. There is no written record of what took place on that momentous occasion. Even the exact date is lost in the maze of unwritten history. But on that afternoon Cyrus Hall McCormick demonstrated to a skeptical but needy world that his work was worthy."

Crude Beginnings

McCormick's reaper was not a pure invention. Like Watt's steam engine, Fulton's steamboat, Stevenson's locomotive, and most others, it was in large part based upon experiments in that direction by a line of British inventors running back as far as 1786. In Scotland, in 1826, Patrick Bell developed a workable reaper, the main

principles of which McCormick and a contemporary, Hussey, unquestionably copied a few years later. According to George Iles, "McCormick never acknowledged how much he owed to preceding inventors." At the London Exposition in 1851, McCormick's pretensions to priority were ridiculed by British writers, but the latter admitted that America offered the greater field for the use and development of the machine.

The reaper, however, did not immediately take America by storm. Farmers were slow in taking to this new-fangled device which, moreover, was crude and inefficient at first. After 1831, McCormick spent the next few years on further experiments, and did not obtain his first patent until 1834. Of this period he afterward wrote:

"During this interval I was often advised by my father and family to abandon it, and pursue my regular business, as likely to be more profitable, he having given me a farm. No machines were sold until 1840, and I may say they were not of much practicable value until the improvements of my second patent in 1845."

The Progeny of the Reaper

McCormick persisted in his course, nevertheless, making improvements himself and appropriating those of other designers. Later, he established his manufacturing plant and business in Chicago; fought his rivals for years over patent rights and with the picturesque methods of mid-nineteenth century "rugged individualists" in their competitive scramble for markets. Under the management of his son, Cyrus the Second, the McCormick Harvester Company sought to develop a complete line of agricultural implements and, finally, to achieve this monopoly merged with other

manufacturers and distributors into the great International Harvester Company. Summing up these developments, Cyrus McCormick, the grandson, observes: "The reaper is the progenitor of all those agricultural implements which run upon the ground to deal with grown crops." It was followed in 1837 by John Deere's steel plow with its improved moldboard design; in 1857 by James Oliver's chilled steel plow that would scour in all kinds of soil; by self-binders; mowing machines, hay tedders, rakes, and loaders; multiple row cultivators; grain combines; corn harvesters; tractors; power sprayers, including airplane dusters; and finally, to date, a successful cotton picker.

The Reaper and the Civil War

The reaper made possible the exodus from farm to factory, meanwhile increasing the food supply with less human labor per unit of production. Along with Ericsson's development of the iron-clad Monitor, Howe's sewing machine, and other devices, it played a significant role in the Civil War. Secretary of War, Edwin M. Stanton, said of it during that conflict:

"The reaper is to the North what slavery is to the South. By taking the place of regiments of young men in the Western harvest fields, it releases them to do battle for the Union at the front, and at the same time keeps up the supply of bread for the nation and its armies. Without McCormick's invention, I fear the North could not win, and the Union would be dismembered."

Just as the invention of the cotton gin by Eli Whitney in 1793 fastened the institution of negro slavery upon the young Republic, so 70 years later McCormick's reaper aided in its elimination. The irony in these cases

is seen in the fact that Whitney was a New England Yankee in no way sympathetic with slavery, while McCormick was a Virginia farmer and slaveholder whose sympathies in the Civil War were with the South. Technology moves on producing its social effects without regard to opinions or "sympathies."

With the advent of the reaper, American agriculture began its grand march toward potential efficiency equal to that of other industry. The full measure of actual efficiency in respect to both categories awaits the coordinating social design of the Tech-

nate. But, thanks to such technologists as McCormick and his successors, the materials are all in sight equally in industry and agriculture.

Meanwhile, not to get too far ahead of our story, I shall continue these rambling "Flashes" by touching upon another important development having its beginnings about this time simultaneously in Great Britain and the United States. My next "Flash" will bear the title, "Kelly Makes a Discovery in Steel."

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Cyrus McCormick, "The Century of the Reaper."
George Iles, "Leading American Inventors."

Lo! The Poor, Dumb Indian

Sixty years ago the Government put a dying tribe of Apache Indians on a reservation near Jicarilla in the northwest corner of New Mexico. The reservation covers over 700,000 acres. The land was divided into parcels and allotted to individual tribal members. The idea behind this was that private ownership would help to break down ancient tribal customs. It was hailed as a progressive move by everybody except the Apaches. 'They generally paid no attention to the allotments and continued to graze their cattle and sheep, which they own individually, on the land just as though it were tribally owned.'

'Although the Jicarilla Apaches possess stock as individuals, they maintain a special flock of sheep which supports the aged and indigent.' As the years went by individual tribe members voluntarily surrendered their allotments to the tribe as a whole in return for the right to use the land for grazing, etc. Of course, this is contrary to the sacred principles of free enterprise. But what else can you expect from a poor dumb Indian. By now all but 43,000 acres have been returned to the tribe.

To make this behavior even more trea-

sonable from a white man's Price System point of view the *Chicago Sun* reported on December 22, 1946 as follows. 'Surveys have indicated the presence of oil and the Apaches want any prospective proceeds to enrich, not a few individuals but the whole Jicarilla tribe.'

The end of this story is that the mighty United States Government has been forced to OFFICIALLY recognize the failure of good old free enterprise on the Apache Indian Reservation. This was done on December 22, 1946 and announced in a release of the Department of The Interior of that date. Hurray!

'I believe that we are lost here in America, but I believe we shall be found . . . I think the true discovery of America is before us. I think the true fulfillment of our spirit, of our people, of our mighty and immortal land is yet to come. I think the true discovery of our democracy is still before us. And I think that these things are as certain as the morning, as inevitable as the noon.' (Thomas Wolfe, in the last chapter of his posthumous novel, *You Can't Go Home Again*.)

Technocracy And Your Trade

The Bituminous Miner's Changing Status

By Organization Division, 8741-1

Prospects for bituminous miners in the postwar years depend upon several changing factors. Among these are the further development of coal technology and the increasing efficiency of its production and use. There is also the growing competition of the industry with other sources of energy such as oil, gas, hydroelectric, wind and atomic power. Finally, the miner's status will depend greatly upon the general level of all industrial activity. Let's look at these factors below and see how things are going to stack up for the bituminous miner.

Efficiency of Production

In 1891 one miner produced about 2.5 tons of coal in a 10-hour work-day. At that time less than 5 percent of the coal was cut by machines. In 1946, 55 years later, one man produces about 5.5 tons of coal in an 8-hour day; and over 90 percent of the coal is cut by machines. Mechanical loading was unknown in 1891. Even as late as 1924 it was used for less than one percent of underground production. Twenty years later, in 1944, 53 percent of all underground coal was loaded mechanically.

The result of this mechanization was that output per man-hour in bituminous mining increased 100 percent between 1919 and 1939. Between 1939 and 1945 it rose another 20 percent. Machine cutting, loading and strip mining increased during the war. Despite war-time shortages, new mobile loading machines and conveyors were installed underground. In strip mines larger draglines and new type excavators were added. Strip mining accounted for only about one percent of total coal tonnage in 1919. By 1939, this had risen to over 9 percent and now is over 15 percent.

This development of technology is reflected also by the record of increasing production and declining employ-

ment in bituminous mines. The largest tonnage of coal in any pre-war year was produced in 1918. Production, then, was 579,000,000 tons and employment stood at 615,000 miners. In 1944 production was 619,000,000 tons, but employment had declined to 354,000. Thus between 1918 and 1944 the overall trend was that production increased about 7 percent, but employment declined more than 35 percent.

As late as World War I, all coal was loaded by hand. Since then, up to June 1945, over \$500,000,000 worth of mechanical equipment was installed. To this the Bureau of Labor Statistics, in August 1946, adds the following:

During the war, coal operators encountered serious difficulties in maintaining their production facilities and in replacing worn-out equipment. Nevertheless, substantial gains were made in average man-hour output. When operators are able to replace worn machinery with improved equipment, a rise in efficiency will naturally ensue.

Efficiency of Use of Coal

Steam-electric utility plants required over 7 lbs. of coal to generate one kilowatt-hour of electricity back in 1890. Today, the best plants use

Flashes of American History

V—Baltimore Builds a Railroad

By Ben H. Williams, 8141-15

THE completion of the Erie Canal in 1825 brought squarely before the merchants and manufacturers of the other leading Atlantic ports the urgent necessity of similar connection with the growing west. They realized that if they failed in these, New York City would leave them hopelessly in the background. Canal projects became the order of the day. Boston quickly found that for her a canal was out of the question, due to the rugged terrain of Western Massachusetts. Philadelphia undertook to break through to Pittsburgh by means of canals with locks, and inclined planes to portage the loads over hilly obstructions. This was slow and costly, necessitating frequent loading and unloading of freight and passengers. Baltimore had already promoted successfully two fine turnpikes connecting that city with the Ohio country. Her merchants now turned to the ambitious project of a canal that should connect Chesapeake Bay with the Ohio River and merging with a second canal leading to Lake Erie. The Chesapeake & Ohio Canal Co. was formed for this purpose. But engineers reported that the cost of such a waterway was prohibitive, and later pointed out that even the first link in such a canal system—that between the Chesapeake and the Potomac—was not feasible.

The B. & O. Railroad

So, in 1826, Baltimore promoters turned to the possibility of a railway. In that year, two men—Phillip E. Thomas and George Brown—went to England 'investigating railway enterprises, which were at that time being

tested in a comprehensive fashion as commercial ventures.' The following year, a charter was obtained from the Maryland Legislature for a company to be known as 'The Baltimore and Ohio Railroad Company' with the right to build and operate a railroad from the city of Baltimore to the Ohio River. Construction of the railway began on July 4, 1828. Speaking of the beginning of this enterprise, Archer B. Hulbert says:

The difficulties which faced the Baltimore enthusiasts in their task of keeping their city 'on the map' would have daunted men of less heroic mold. Every conceivable trial and test which nature and machinery could seemingly devise was a part of their day's work for twelve years—struggles with grades, locomotives, rails, cars. As Rumsey, Fitch, and Fulton in their experiments with boats had floundered despondently with endless chains, oars, paddles, duck's feet, so now Thomas and Brown in their efforts to make the railroad effective wandered in a maze of difficulties testing out such absurd and impossible ideas as cars propelled by sails and cars operated by horse treadmills. By May, 1830, however, cars on rails, running by 'brigades' and drawn by horses, were in operation in America. It was only in this year that in England locomotives were used with any marked success on the Liverpool and Manchester Railroad; yet in August of this year Peter Cooper's engine, Tom Thumb, built in Baltimore in 1829, traversed the twelve miles between that city and Ellicot's Mills in 72 minutes. Steel springs came in 1832, together with car wheels of cylindrical and conical sections which made it easier to turn curves.

Crude Beginnings

This and other early railways of America illustrated quite conclusively the inability of pioneer engineers to create sudden departures or drastic changes in materials, methods, or designs. The original locomotives were vertical steam engines on platforms without covering from wind, rain or snow. They burned wood, and their stovepipes spewed smoke and hot coals all over the landscape. The cars behind this fiery monster were modeled after the stage coaches in use at the time, with top passengers at sides and ends exposed to the full charge of smoke and live coals.

One writer of that period described this first trip on one of these trains. He says the passengers carried umbrellas to shield them from the sparks, but in a short time all of these umbrellas went into the ditch, having been burned up. The passengers then spent the rest of the trip in trying to protect their faces and hands, and in slapping at their neighbors' clothes putting out fires.

Railroad track gauges were of several widths, narrow, broad, and medium. Rails originally were of wood, later with a band of iron on top, then short rails of cast iron that frequently buckled, causing wrecks and killing passengers by coming up through the bottoms of cars. Brakes were defective; there was no telegraph nor adequate signal systems.

Between such a crude device and that of the modern streamlined railway train is a long time of technological achievements, with changes slow at the beginning, picking up speed even as the locomotive itself picked up speed, finally emerging into the precise mathematical designs of the present with their attendant technological aids to efficiency. But that is a story too long and detailed to be even summarized in this 'Flash.' The point

here is that these changes in railway transportation, though increasingly dynamic, were never 'revolutionary'—there were no abrupt departures from what had gone before. The same may be said here as has been said regarding the evolution of architecture, namely: that, for instance, the beautiful structure built by the ancient Greeks on the Acropolis at Athens was in its basic design merely 'a glorified log cabin.' Between that 'brain child' of Phidias and its original crude log cabin ancestor of savage days was a long stream of diversified architectural development, nevertheless the Parthenon failed to completely conceal its ancestry. Just so the streamlined train of 1937 is in direct line of succession from the clumsy railway trains of the 1830's.

Railroads Lead the Grand March

The B. & O. was not completed to the Ohio River at Wheeling until 1853. Meanwhile, thousands of miles of railroads, with improved equipment, had been built. The canal tow-path had grown up to weeds, and the picturesque 'wayside inn' with its crowd of rollicking travelers, westward bound, and its roughneck stage drivers and freight haulers, had passed from the scene along the American highways. Chicago was about to become the railroad center of the world. Transcontinental lines, connecting the Atlantic and the Pacific, were in the offing.

In speed and mobility of transportation the railroad was vastly superior to the canal. It could be constructed to any point of high or low altitude quickly and at comparatively low cost. It became a mighty dynamic instrument for stimulating industrial expansion, opening up new areas for settlers, undermining sectionalism and, while bringing disturbances and discontent to rural America, it swiftly

cleared the way to the dominance of the city over the country, of industry and finance over 'rural democracy,' of the North over the South.

At the same time, certain dynamic changes were taking place also in American agriculture, which will be

noted in our next 'Flash,' entitled 'A Virginia Blacksmith Invents a Reaper.'

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John Moody, same volume, Part 2: 'The Railroad Builders; A Chronicle of the Welding of the States.'

'He Just Keeps Rolling Along'

A new type masonry drill, made by Carboloy Co., Inc., Detroit, is claimed to cut through concrete faster than any other available tool. It is said to have drilled thousands of conduit holes in concrete ships built by Concrete Ship Constructors, National City, Calif., ten times faster than was previously possible. This efficiency is attributed to the drill's blade which is made of Carboloy cemented carbide, the hardest metal yet produced. The drill eliminates the customary prolonged hammering and can drill an average of 300 holes before requiring sharpening in contrast to the frequent resharpening needed by the regularly used star drills. *Western Metals*, Aug. 1945.

A new weed-killing liquid spray developed by Socony-Vacuum Oil Co., Inc., is reported to be effective in destroying weeds among carrots, parsnips, and parsley. Its advantage over other weed-killing preparations is that it leaves no apparent residue and, more important, does not affect the taste of the vegetables. A few days after the spray has been applied, the weeds look as if they had been killed by a heavy frost. About 80 gal. of spray, costing less than \$12, is required per acre. Pulling weeds by hand costs more than \$60 per acre—*National Petroleum News*, Sept. 12, 1945.

'Picking Hops (for beer makers) on the Pacific Coast is keeping pace with the machine age. Individual mechanical pickers garner 57,000 pounds of hops a day. An Oregon grower says he can harvest 90 acres with 60 men—plus the picking machine. Without the machine he needs 200 to 250 men.'—(*Wall Street Journal*, Sept. 10, 1946.)

The installation of two-way radio equipment aboard a fast freight train on the D&RGW Railroad has yielded a saving of three hours running time in the 570 mile haul between Denver and Salt Lake City. The railroad reports that time was saved in the elimination of hand signaling, the clearing of switches, checking of hot boxes and dragging brakes. Radio greatly facilitated the teamwork of the crews by providing constant information on cargo conditions and right of way. (*Radio News*, July, 1945.)

A skilled hand-maker of cigarettes could turn out 1800 cigarettes in eight hours back in the 'good old days.' A first-class handpacker could package about 40,000 cigarettes in eight hours.

The latest model cigarette making machine turns out 1250 cigarettes every minute. The latest lightning-fast packing machines pack and seal 'millions of packs' each day (*Domestic Commerce*, November, 1946).

Since the end of World War II the backlog of patent applications pending in the Patent Office has risen to 130,000 (*Invention News and Views*, October, 1946).

Technothoughts

by Sam Pavlovic, R. D. 9344

The only social change that dollar daffy price puppets are aware of is the kind that jingles in the cash register.

* * *

Could we say that our present pattern of governance is an Oligarchy of Obstructionism on the highway to the New America?

* * *

Price System Abundance: Spurious Social Salves for Sappy Suckers.

Price System Scarcity: 20/20 Social Vision.

* * *

Strange as it seems: Machine tolerances, in the final end, will eliminate social intolerances.

* * *

In a Price System, the two main modes of exercise are chasing debt tokens and jumping at conclusions.

* * *

Stumbling block: Peculiar prehistoric principles of Price System propriety.

* * *

The prime pulsation in a Technate will be the throbbing rhythm of power.

* * *

American fetish: Too much faith in labels. We think in terms of labels; speak in terms of labels; and act in label patterns.

* * *

Aside to American labor: Before you were organized, you scrambled for crumbs. Today the crumbs are a wee bit larger, but you're still scrambling, brother.

* * *

North America has a wonderful foundation for a social structure that will make our fondest hopes seem like a piker's dream. TECHNOCRACY merely advocates building the structure. The men, machines and materiel are available. The blueprint is ready.

make the next pass at her. That's one reason why a small flock usually lays better than a big one—there's less pecking, more eating, and more laying.

Chickens characters, Dr. Guhl says, are 'about like humans,' and just as varied, although simpler and more mechanical.

He isn't sure that chickens have emotions, but he won't say they don't. When a rooster loses a fight, for example, the red parts of his face grow pale, while the winner's grow even more red. The loser's feathers flatten, the winner's fluff up, and he will strut around with his head in the air.

I asked if chickens can talk. Dr. Guhl, being a conscientious scientist, wouldn't go as far as to give a flat 'yes.' But he has identified seven distinct sounds—those of threat, alarm, contentment, courting, irritability, and the crow and the cackle.

In one pen he was working with the hens would all shake their heads every now and then. He finally discovered why—it happened each time a cock in a nearby pen let loose a deep bass crow. Another bird he knew used to crow every time he won a fight—and he always won. That is, until one day when he got the stuffing knocked out of him. It was a long time before he'd crow again.

This business of studying chickens has its problems. Dr. Guhl wanted to find out whether the chickens in the top half of the peck order gained more weight than those at the bottom. To do a really scientific job, he figured he should weigh the droppings as well as the birds. 'I even made diapers for them,' he says. 'It didn't work too well.'

But why, after all, does one chicken peck another? Dr. Guhl's answer is simple: 'To get enough to eat.' The hard-boiled hen makes room for her-

self at the feed trough and the water fountain. She chooses the choice spot to scratch. She gets her fill early, so she roosts early. Because she eats and drinks plenty, and sleeps enough, she stays healthy and lays well.

There's no guesswork in Dr. Guhl's discoveries. He banded his birds with colored rings so that he could recognize each bird at a glance. Then, hour after hour, he noted which hens pecked which. He made thousands of pages of pencilled notes.

Then, to make doubly sure his conclusions were right, he trap-nested his flocks. Night after night he went through the chicken house to see which birds were roosting where. Carefully-kept records showed that birds died more or less in the 'peck order.'

If you're a poultryman, what does this all mean to you? How can you cut down pecking in your flock? (Don't confuse pecking with feather picking.)

'Remove the cause of competition,' says Dr. Guhl. Give the birds enough feed hopper and water fountain space; enough floor and roosting room, and enough nests, so no hen has to fight for her living.

Don't put new birds into an organized flock if you can avoid it. It's disrupting while they find their places in the peck order.

Finally, what has Dr. Guhl learned that may explain human behavior? 'The organized flock,' he says, 'eats more, pecks less, and produces more. It establishes a balance between co-operation and competition. If we can learn anything from chickens, it may be that if people are to be productive and contented, they must have enough to eat.'

'If you want production, you must have peace.'

Flashes of American History

IV—DeWitt Clinton and the Erie Canal

By Ben H. Williams, 8141-15

We are told that coming events cast their shadows before them. Without the 'electric eye' of Science, however, few of the participants in these events are able to open the door of understanding to their future implications. For instance, unbeknownst to him, Jeffersonian democracy, and the supremacy of Virginia in a social sense, were on their way out, long before Thomas Jefferson had retired from the Presidency to his estate at Monticello in 1809. Viewing the future of the United States at the time of the Louisiana Purchase, Jefferson saw no hope of keeping this vast area intact under one government, and consoled himself with the idea that the two nations that eventually would take form as a result of increased population would be composed of the same basic stock and therefore probably would maintain friendly relations with each other.

Isolation of West from East

Meanwhile, the population was increasing rapidly on the other side of the Alleghenies. Ohio, Indiana, Illinois, Michigan, and Wisconsin were being cleared of forests, and their rich agricultural areas were filling up with settlers. The problem of transportation of needed goods to and from these sections was becoming more pressing each year. The outlet to the Gulf had been secured for settlers near the Mississippi and its tributaries, but Atlantic seaports and manufacturing centers were inaccessible. To open up the West to commerce with Boston, New York, Philadelphia, Baltimore, and Charleston was a problem occupying the earnest attention of their leading merchants and manufacturers from the latter part of the 18th century on well into the nineteenth.

The only practicable approach to that problem at the outset appeared to be in the direction of improved roads or turnpikes. Hundreds of companies were formed to build these roads. Harry J. Carman informs us that by 1832 Pennsylvania had over 2,000 miles of improved highways. By 1810, upwards of 180 turnpike companies were formed in New England. Con-

necticut built nearly 820 miles of hard-surfaced roads, New York had chartered 137 companies. Baltimore promoted three turnpikes to the West. But few of these had reached the trans-Allegheny country. Insuperable obstacles still separated the East from the areas between the Allegheny Mountains and the Mississippi River. Economic necessity forced the merchants and manufacturers of the five leading Atlantic seaboard cities to seek a different solution to their problem.

Genesis of the Canal

The idea of an artificial waterway connecting the Hudson River with the Great Lakes had been hanging fire for a long time. As far back as 1784, Christopher Colles, a New Yorker of engineering talent, tried to interest the New York legislature in undertaking the venture. He was warmly seconded by General Philip Schuyler and others. New York merchants backed the project, contending that without it New York must remain in comparative commercial isolation. Two companies were chartered by the New York legislature, but made little progress toward their objective in the face of the usual opposition.

Taxpayers, including those along the proposed route, were indifferent or strongly opposed; the federal government repeatedly declined to assist; even westerners, who believed they would eventually take possession of Canada, and thereby have unrestricted use of the St. Lawrence route, declined to lend support. Besides, there were few trained engineers available, and modern excavating machinery was non-existent. Only Nature, in the matter of topography, favored the New Yorkers as against their rivals. The pass through the Mohawk Valley made possible the construction of a canal, whereas no such waterway was practicable at that time either for Boston, Philadelphia, or Baltimore. To make the dream of Christopher Colles a reality required a promoter of sufficient driving power and tenacity, to put it through. That promoter came forward in the person of DeWitt Clinton.

The Canal Promoter

DeWitt Clinton has been classified by some historians as a 'corrupt politician.' He is said to have initiated the 'spoils system' and to have handed it over full-fledged to Andrew Jackson, who gets the credit of having originated it. Clinton was a life-long foe of Tammany. He is accused of having kept alive the feud between Aaron Burr and Alexander Hamilton to the point of the duel between these two, whereat Hamilton was killed and Burr eliminated through disgrace. Clinton never compromised with an enemy. Of sturdy physique, he did not hesitate, whenever he deemed it necessary, to use his fists either upon a gentleman in powdered wig or a stevedore on the East River docks.

Repeatedly chosen governor of New York in the face of Tamany opposition, and only missing the Presidency of the United States in a contest

against Madison, DeWitt Clinton clung to one office, in the face of ridicule and contumely, with a tenacity worthy of the best type of American promoter. The office was that of Canal Commissioner. For twenty years Clinton acted as such without pay. He had set his face to the task of building the Erie Canal, and would not give up. In a moment of political eclipse, due to Tammany opposition, even the office of canal commissioner was taken away from him by the New York legislature, but Clinton came back, got re-elected Governor, and pursued his course.

Clinton's Prophecy

In promoting the canal, Clinton gave utterance to this significant prophecy. I quote from his 'Memorial' of 1816:

As an organ of communication between the Hudson, the Mississippi, the St. Lawrence, the great lakes of the North and the West and their tributary rivers, it will create the greatest inland trade ever witnessed. The most fertile and extensive regions of America will avail themselves of its facilities for a market. All other surplus productions, whether of the soil, the forest, the mines, or the water, their fabrics of art and their supplies of foreign commodities, will concentrate in the city of New York, for transportation abroad or consumption at home. Agriculture, manufacturers, commerce, trade, navigation, and the arts will receive a correspondent encouragement. The city will in the course of time become the granary of the world, the emporium of commerce, the seat of manufactures, the focus of great monied operations, and the concentrating point of vast, disposable, and accumulating capitals, which will stimulate, enliven, extend, and reward the exertions of human labor and ingenuity in all their processes and exhibitions. And before the revolution of a century, the whole island of Manhattan, cov-

ered with habitations and replenished with a dense population, will constitute one vast city.

Under Clinton's initiative, the State of New York began construction of the canal in 1817. The \$7,000,000 estimated as the cost of building this waterway was borrowed on the credit of the State. Funds for interest and principal were obtained by taxes on auction sales, manufactured salt, and from persons traveling stated distances on Hudson River steamboats. A lottery was resorted to, and private donations and legislative appropriations made up the balance. Tolls, after the canal was completed, were to be thrown into the jackpot. Clinton saw to it that no grafter got any of this.

Finally, at the end of eight years, terminating disheartening engineering difficulties, and in the face of persistent Tammany opposition, 'Clinton's Ditch' was completed, and one day a fleet of boats headed by the *Seneca Chief* started from Lake Erie on their 513-mile triumphant journey to New York Bay. On November 4, 1825, Governor Clinton poured a cask of Lake Erie water into the sea to symbolize 'the marriage of the waters.'

Great Social Implications

Implicit in this great engineering project were vast and far-reaching social changes, which swiftly made themselves manifest after its completion. Along with the development of the steamboat, and improved highways, the Erie Canal made accessible a growing market for the products of the western farmers. It forced the New England farmers to abandon their rocky hillsides and to join the procession of sturdy immigrants from Northern Europe in the 'winning of the West,' thus breaking down that fast-going-stale New England culture

and affording a new field for those fundamental qualities of thrift and enterprise developed in the colonial experience of Northeastern America. It also pulled the center of social gravity away from Virginia and the South and, along with the expansion of territory through the Louisiana Purchase, brought swiftly to a head the 'irrepressible conflict' over Negro slavery. The construction of the Erie Canal eliminated the probability of future disunion between East and West, and paved the way for ultimate reunion of North and South. Above all, its successful achievement made America conscious of her Continental destiny and, as Archer B. Hulbert says: 'Never since that time have men doubted the ability of Americans to accomplish the physical domination of their Continent.'

Through the Erie Canal in 1825, and the subsequent construction of artificial waterways, a complete water transportation system bade fair shortly to connect the Mississippi and the Gulf with the Great Lakes and the Atlantic Ocean. But a new development in transportation intervened at this point to halt that scheme, just when the bare connections had been made. Another century of technological and social progress would pass into history before a Hydrology, commensurate with Continental requirements, could be designed.

This new development in transportation will be touched upon in our next 'Flash,' with the title 'Baltimore Builds a Railroad.'

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Flashes of American History

No. 1. Shays' Rebellion in 1786

By Ben H. Williams, 8141-15

This is the first of a series of articles which originally appeared in 8141, the predecessor of *Great Lakes Technocrat*. The series deals with various significant points in the development of the United States as it progressed from a handicraft-agrarian stage to a more complex industrial culture.

The Price System has seen to it that every American is well indoctrinated with the hatchet and cherry tree version of our history. This type of miseducation contributes mightily to the maintenance of the status quo. It's a part of the Propaganda of the Price System.

Maybe, however, you are one who wants to know the right answers. If so, here are some facts of our National History. More will follow. This series consists of glimpses of, and sidelights on, the physical history of America. That is our real story as a nation.

Shays' Rebellion quite properly may be labeled 'the first social upheaval in United States history.'

Like most events of significance in a social sense, its meaning has been largely cast into obscurity, hidden behind the veil of a purely 'political' or an equally one-sided 'personality' approach to historical events. Like all other social disturbances in American history, it was primarily economic in origin, development and outcome. The underlying causes are best made clear by examining briefly the historic setting of the early post-Revolutionary period.

Post-Revolutionary United States

The formal treaty of peace with Great Britain in 1782, found the thirteen American colonies in a demoralized state. Trade with the West Indies and with Europe was at a standstill, with the British blockade still in force. Currency of gold and silver was practically non-existent and the various issues of Continental cur-

rency inflated to the point where one dollar in silver was worth \$120.00 in paper, and taxes had to be paid in hard money. Universal indebtedness based upon pre-war money evaluations added to the difficulty of collecting either interest or principal, while the laws against debtors enabled their creditors to seize their property for any part of the debt, or to remand to prison the debtors themselves until such time as they or their relatives or friends met the obligation.

These laws extended to delinquent taxes as well as to other debts. The concentration of debt claims in the hands of loan and mortgage sharks and speculators in securities in the larger towns and cities brought about antagonism of an acute form between them and thousands of farmers and laborers of the back counties. Most of these farmers and laborers were returned soldiers who had just made America safe for 'life, liberty, and the pursuit of happiness'; who had successfully resisted 'unjust taxation' by Great Britain and now found them-

selves facing debtors' prison for inability to pay 'just taxes' imposed by their fellow patriots. They saw these prisons day by day swallowing up hundreds of their relatives and friends, many of whom died therein of diseases due to overcrowding, insanitation, and starvation. Their farms and homes were mortgaged to greedy security holders, who had legal power not only to take away their property but to slam their persons into prison as well. Employment was impossible to obtain, owing to general industrial and commercial paralysis; while surplus farm crops, unable to find markets, rotted in barns. Contrary to popular notions prevalent at the present day, this was a nearly universal status of the American Republic at the period of its birth and early infancy.

It was no accident that the State of Massachusetts became the stamping ground for that reaction against these conditions known to history as Shays' Rebellion, any more than it was an accident that the early events of the Revolutionary outbreak against Great Britain occurred in the same area. Massachusetts was more advanced in an economic sense than any of the other colonies. Boston was both the largest and 'most flourishing of the commercial centers. Its merchants and privateersmen had made fortunes in 'rum, molasses, and black ivory' (negro slaves). Fishing, shipping, and ship-building had attained an advanced stage of development up to the outbreak of the Revolutionary war. Manufactories were springing up in Massachusetts to a greater extent than elsewhere in the Colonies. Consequently, the economic paralysis following the war hit that State hardest of all. Massachusetts found her slow yet certain emergence from the ox-cart stage suddenly checked, and re-

acted accordingly. Social action battered at the walls of economic maladjustment.

Origin and Course of the Rebellion

Initial bombardments of the discontented agrarians, from 1782 on, took the form of petitions to the legislatures and courts for a redress of grievances. Remains of the British feudal code, as above indicated, still clung to the jurisprudence of the new-born Republic, while caste lines between elements of the American population were strong. These caste distinctions had not been wiped out by the mere declaration of human equality, nor by the eight years' war for independence. Merchants, money-lenders, and their henchmen the lawyers, sheriffs and bailiffs, were in control of courts and legislatures. Many of these 'big-bugs' not only were in the habit of expressing contempt for the common people in words, but, after the peculiar caste fashion in feudal England in all relationships growing out of trade, employment, and jurisprudence, the common people were studiously treated as inferiors.

Getting no results from petitions, the rising tide of agrarian discontent quickly assumed a more militant form. Lawyers and judges subservient to the money sharks were denounced as enemies of the people. The larger merchants of Boston were condemned as 'importers of luxuries' and as would-be 'aristocrats.' 'Their (the rebels') creed,' wrote Henry Knox to George Washington, 'is that the property of the United States has been protected from the confiscation of Britain by the joint exertions of all, and therefore ought to be the common property of all.' However far this notion of 'common property' may have spread, the fact remained that the people daily saw their individual

properties confiscated through court action and the liberty of their persons threatened through the same agencies.

Direct action or open rebellion broke out in central and western Massachusetts in 1786, under the ostensible though little-coordinated leadership of Daniel Shays, a former captain in the Revolutionary army—"of doubtful reputation," certain historians add, without further specification. Anyone who remembers what happened to the reputation of Thomas Paine at the hands of the prejudiced religious zealots, will be suspicious of this disqualification regarding Daniel Shays by equally prejudiced descendants of the would-be 'aristocrats' of 1786. Whatever 'doubt' may be cast upon his reputation as an officer in the Revolutionary army, Shays in the rebellion conducted himself as a true captain; he was the 'last to leave the ship.'

The strategy of the rebels was direct and clean-cut, consisting in the main of armed and mostly successful attempts to prevent the courts from sitting pending legislative redress. In addition, jails were broken into and debtors released. Villages and towns were occupied by armed rebels, and 'leading citizens' deposed from power or held as hostages. Boston was never penetrated by the rebels, nor were threats against the nearby courts at Cambridge and Concord carried out.

By certain historians much has been made of the alleged clemency of the 'constituted authorities' toward the 'misguided rebels'; that is, of the reluctance of the former to employ drastic methods against the 'mob.' The movement was not officially declared a 'rebellion' until the moment of its collapse a year from its inception, while the leaders, some of whom were court-martialed and sentenced to the

gallows, were subsequently pardoned, including Shays himself.

The facts, however, do not sustain this legend of clemency due to the 'humane' characteristics of the 'aristocrats.' Their 'clemency,' on the contrary, was quite obviously based upon fear, both for the time being and for the future. The rebellion unquestionably had the backing of the overwhelming body of the people, including most of the troops sent by Governor Bowdoin into the back counties to put it down. It also had the sympathy and support of large numbers of people in the surrounding territories of New Hampshire, Vermont, Connecticut and New York. It was in no sense a revolution, but simply a revolt against a temporary 'bottleneck' of social conditions requiring speedy readjustment and, as such, more than accomplished its avowed purpose. The aftermath of Shays' Rebellion is thus summarized by Thomas Egelston, great-grandson of Major General John Paterson, one of the military leaders in opposition to the rebels:

'After the rebellion was over, the legislature, by carefully prepared enactments, and the courts, by very wise decisions ameliorated the evils as far as it was possible, and the people themselves, by mutual forbearance, diminished the troubles which previous harsh measures had made so grievous. Imprisonment for debt ceased little by little to be the fashion, while laws ameliorating the too harsh relations between debtor and creditor were passed. The farmer saw that whatever else was true, his land could not produce everything that he required to work his farm, or even for his convenience and comfort; that he must purchase certain articles, and that, although these things might be imported, they were not of necessity

articles of luxury and therefore a cause of demoralization. Grievances were adjusted by proper course of law, and the State settled down quietly into a prosperity that it had never known, even in pre-Revolutionary times. Village life became a routine of everyday duties. The town meeting, which had been the safety-valve up to the time of the Revolution, resumed its functions, and peace and quiet reigned throughout the State.'

The Rebellion and the U. S. Constitution

The foregoing by no means tells the whole story. Behind the backs of the bewigged and powdered gentlemen engaged at that very moment in secretly framing a new Constitution for the States, stood the nemesis of Shays' rebel hordes tramping over the fields and through the towns of Massachusetts. These gentlemen of the Constitutional Convention, whom Charles Beard classifies as 'practical men of affairs—holders of state and continental bonds, money lenders, merchants, lawyers, and speculators in the public land'—were unquestionably influenced by events in Massachusetts to compromises and concessions that otherwise would have seemed to them unnecessary. For, in secret (the debates in the Constitutional Convention were not published until 50 years later), they expressed their fear of 'democracy.' Quoting from Beard:

'Almost unanimous was the opinion that democracy was a dangerous thing, to be restrained, not encouraged, by the Constitution, to be given as little voice as possible in the new system, to be hampered by checks and balances. Gerry declared that the evils the country had experienced flowed from "the excess of democracy." Randolph traced the trouble of the past few years to "the turbulence and fol-

lies of democracy." Arguing in favor of a life term for Senators, Hamilton exclaimed that "all communities divide themselves into the few and the many. The first are rich and well-born and the other the mass of people who seldom judge or determine right." Morris wanted a Senate composed of an aristocracy of wealth to "keep down the turbulence of democracy." Madison, discoursing on the perils of majority rule, stated that their object was "to secure the public good and private rights against the danger of such a faction, and at the same time preserve the spirit and form of popular government."'

In their terror of 'democracy,' the Fathers of the Constitution sought long and earnestly a way out of their difficulties. Among others they considered a 'property qualification' for the suffrage, but decided that the handful of bond-holders and money-lenders would not be sufficient to put the instrument across, since two-thirds of the voters necessary for ratification were farmers. So they dropped that proposal and substituted a three-part system of government: legislative, executive, and judicial, with many checks and balances, but with hazily-defined interrelations, which, Beard declares, has caused the whole world 'to marvel at their dexterity' ever since.

Still, the ghost of Shays' Rebellion would not down. A few years later, the first ten amendments were added to the Constitution—the so-called 'Bill of Rights'—and the United States was then fairly launched on its independent political career. In this manner, political 'wisdom,' as usual, waited upon the reaction to economic development and, then, in its practical applications to the situation, again, as usual, lagged far behind that development.

Shays' Rebellion was the first of

a series of agrarian reactions against the 'vested interests,' social movements leaving a broad trail across the pages of American history.

Meanwhile, at this point, another factor, of deterministic character, enters the picture. It will be considered in its beginnings and some of its subsequent social implications in our next installment under the title 'Whitney's Cotton Gin and Slavery.'

References on 'Shays' Rebellion':

Charles Martyn: 'Life of Artemas Ward.'

Thomas Eggleston: 'Life of John Paterson.'

Edward Bellamy: 'The Duke of Stockbridge.'

Charles and Mary Beard: 'Rise of American Civilization.'

From Here on Out

Keep Your Eye On The Trends

by R. F. Novalis

Increasing Trends..		All-Time LOW	Latest HIGH Figures*
1. DEBT (U. S. Govt.) per person.....	January 1, 1840	0.21	\$1,870.00
2. ENFORCED LEISURE (unemployment.....)	October 1944—	630,000	1,575,000
3. MACHINE TOOLS in use** (cumulative total).....	1925.....	700,000	1,789,500
4. BANK LIQUIDITY (percent deposits to reserves, Federal Reserve Banks).....	1921.....	60.0%	98.00%
5. GOVT. (U. S.) BONDS to total bank invest- ments (Federal Reserve Banks).....	1929.....	39.0%	93.2 %
6. GOVT. (U. S.) BONDS to total life insurance investments	1915.....	.0005%	60.03%

Decreasing Trends		All-Time HIGH	Latest LOW Figures*
1. PRODUCTION (combined factory-mine-railroad freight) Index basis 1919-20 monthly aver- ages equal 100	Oct.-Nov. 1943—250		199.
2. MAN-HOURS WORKED (total of man-hours in factory-mine-railroad) (Note: 1919-20 month- ly average was 2.54 billion) Actual number	Oct.-Nov. 1943 3.14 billion		2.42 billion
3. MAN-HOURS PER UNIT in above industries, combined average	1919-20—100		39%
4. ENFORCED SCARCITY (load factor on installed capacity of above industries)	No Figures		22%
5. INTEREST RATES (combined average yield on Govt.-municipal-corporate bonds)	1919-20 6.12%		1.81%
6. OSCILLATION DOWNWARD of factory output since all-time peak (Oct.-Nov. 1943).....			35%

* September-October, 1945

** No figures available on number of machine tools scrapped

Ed. Note: See January-February "Great Lakes Technocrat" for detailed explanation of this table

* Note: Figure on Item 6 of Decreasing Trends in January-February Issue Volume 3, No. 8, page 24 should have read 22½ drop instead of 40.

'One can live forty days without food, four days without water, but only four minutes without air. Which is the more valuable commodity? But air is so abundant it cannot be capitalized and sold. Every commodity made by modern mass production is headed toward the status of air. Sooner or later it will reach a

point where it will not function in a profit economy founded on scarcity. Overproduction, unmanageable surpluses, show that many commodities have already reached that point. It is, then, either a new system consistent with the age of power, or back a hundred terrible years to genuine scarcity. My money is on the new system.'—Stuart Chase.

Inventions + Technology = Less Jobs

By R. A. Seelig

(Condensed from the *Machinists Monthly Journal*, November, 1945)

In the Graphic Arts Building of the Smithsonian Institution is a display of models of inventions which have changed world history, such as the metal plow, the automobile, the reaper and the airplane. A sign reads: 'Creative inventions make new products and new industries create employment.'

The writer of the sign expressed a common belief which has been fostered by much industrial advertising. Opposing such a theory as that embodied in the sign, however, is the fact that an employment breakdown and something approaching national economic collapse came in 1931-32, in an era when scientific progress had reached a new high in world history.

Among inventions that had produced new industries during the preceding 50 years were the automobile, airplane, disk plow, steam turbine, sensitized photographic paper, wireless telegraph and telephone, ductile tungsten for electric filament lamps, high octane gasoline, pneumatic tire, X-ray, internal combustion engine, nitro-cellulose lacquers, high pressure lubricants, television, rayon, nylon, wood pulp paper and scores of others.

Inventions Reduce Jobs

The relationship of inventions to unemployment is not fully determined. However, it is clear that inventions and development of new industries do not automatically increase the net amount of employment; otherwise jobs would have been begging for men in 1932-33. There is strong evidence that advancing technology tends to cause a net decrease in employment

because of ability of machines to produce more goods with fewer workers.

'In 1933,' says the National Industrial Conference Board, industry's own spokesman, 'we used fewer man-hours of labor in manufacturing industries than we did in 1899, and in 1938 we fell once more below the 1899 level.' Meanwhile, our population of working age had been increasing more than a half million a year.

Examples of Job Losses

A coal mine employing 800 men installed a loading machine and displaced 500 of them.

In cigar making, four operators with machines produce the equivalent of 15 by hand.

One wrapping machine with one operator replaces as many as 40 hand wrappers.

The steel mills have introduced machinery that permits 1,600 men to do the work formerly done by 32,000.

In railroading, ton-miles have gone up but employment has gone down.

The phenomenal expansion of the aircraft industry after Pearl Harbor was accompanied by a 200 per cent increase in output per man hour.

In 1830 it took 268 man-hours to produce 100 bushels of wheat on five acres; and by 1930 40 man-hours were sufficient to accomplish the same result.

Typical of what is happening on farms, a planter in the Mississippi delta bought 22 tractors and 13 four-row cultivators and dismissed 130 of his 160 share-cropper families.

A Western Union device known as a 'floating switchboard' operated by

six persons, automatically routes telegrams anywhere in a large district, doing the work of 49 persons.

An advertisement of a business machine company states: 'Wrigley cuts force from 100 to 8 girls. Will save for you proportionately.'

An electric eye device inspects automobile engine wrist pins, doing the work formerly done by 10 to 20 persons.

In 59 manufacturing industries, the output per man-hour increased 91 per cent between 1919 and 1938, according to figures taken from a Department of Labor report.

No Limit to Automatic Machinery

The National Resources Committee reported that 'manufacturing, aided by these registering and controlling devices, will develop further toward the straight line process and full automatic operation.'

There is no limit to the possibilities of automatic devices and there is every indication that no matter how much production is increased, employment will tend downward, unless government takes appropriate action. Chief among the actions required is reduction of hours of labor and increase in the hourly wage in order to spread work and maintain purchasing power. Shorter hours and higher wages are not the sole preventive of another depression, but they are basic.

Need to Face Facts

The war provided full employment—temporarily. Current large purchasing power and pent-up demand for goods and services may temporarily provide something near full employment in the immediate postwar period. A permanent solution depends to a large extent upon recognizing the economics of a machine age and distributing work and wages to fit facts.

Machinery manufacturers express fears of attempts to repress new labor-saving devices by tax or other methods. In their literature they picture machine-smashing orgies by excited mobs of displaced workmen in England during the Industrial Revolution.

Machinery Is Beneficial

Inventions are the source of comforts for the common man such as kings of old could not enjoy. Scientific progress and machinery were a prime factor in winning the war. Invention should be stimulated, not curbed.

But the replacement of labor by machinery has accelerated as compared with 50 years ago. The use of machines for producing power in great quantities at low cost is relatively new. More progress has been made in generation of electricity in the past 20 years than in the preceding 2,000, according to General Electric Company. The steam turbine has been developed to a point where it produces a kilowatt-hour of electricity for the burning of less than a pound of coal; and there are engines that develop more than a horsepower per pound of their own weight.

In 1837 only 436 patents were issued. Now 40,000 to 50,000 are issued yearly. The increasing rate of invention goes hand in hand with increase in production per man-hour in agriculture, manufacturing, mining and related industries.

This means that government action to distribute work and income must also be accelerated and become more positive and widespread.

'Knowledge is power,' says an old proverb. Unemployment won't be eliminated unless our people become aware of its basic cause, advancing technology.

My Bonnie Lies Over the Ocean

Foreign Trade—Fact or Fiction

By Sgt. Scoop

If You Sell, You Must Buy

Vice Admiral Emory S. Land, U.S.N. (Retired), Chairman of the United States Maritime Commission, in an article printed in the June 1945 *The Kiwanis Magazine*, stated that: 'Maintenance of full employment is becoming accepted as the primary consideration of national economic policy.'

He writes on the theme that foreign trade carried on by our own merchant marine will contribute largely to this full employment:

Such an increase in foreign trade as the Commission envisages would result in considerably more than the five to six million jobs that directly or indirectly had root in foreign trade and the shipping industry in pre-war years, for shipping requires more men on shore than at sea.

Additional benefit is credited to foreign trade by the Admiral as follows:

In almost every discussion of the post-war period there arises the question of foreign trade. There is unlimited justification for international commerce becoming an important topic, for the flow of commerce between nations is the lifeblood of world amity.

'The lifeblood of world amity'? One may well wonder at this statement, for history records conquest, plundering exploitation, and international wars because of trade, this so-called 'lifeblood of world amity.' If one studies the course of world trade, one studies at the same time, unavoidably, the course of the modern empires, the course of exploitation of

colonial and other subservient peoples, and the course of modern war.

In his article 'A Merchant Marine—As Peace Insurance,' Admiral Land indicates his knowledge of the declining volume of foreign trade, although he reiterates hopes that it would increase greatly after the war. Only as he approaches the end of the article does he make a statement of prime importance, a statement so out of step with the theme of the article as a whole that it glares forth like an accident. This statement is:

The extent to which producers throughout the world find it advantageous to exchange goods is the prime factor that determines the volume of international trade.

This is basic. All the words put forth orally or in writing are but hogwash if they do not conform to the basic question of advantage. Possibly the most straight-to-the-bulls-eye exposition of the actual situation yet printed is 'The Age of Alchemy,' by Garet Garrett, printed in the *Atlantic Monthly*.

The opening paragraph should send a tremor of death from bow to stern of every one of Admiral Land's postwar ships. It is:

Stated simply, the one most important institution in our complex scheme of material civilization—universal in it—is breaking up before our eyes. World War I rocked it to its foundations; World War II may well finish it. The name of that institution is international trade.

In contrast, Admiral Land states: 'The Commission believes that it

(foreign trade) can be doubled, or even trebled.'

The White Man's Burden

Admiral Land will be sadly disappointed. His anticipated increase in foreign trade will not materialize, and the reason is chemistry. Let us take a few 'for instances' to illustrate the fact that the chemist is figuratively dissolving the postwar merchant marine.

Prior to World War I, ships were busily engaged in transporting nitrates from a Chilean desert to the industrial countries. Germany accumulated huge stockpiles for use as a nitrogen source for explosives. During the first World War, the supply fell far short of needs and the German chemists perfected their methods of getting nitrogen from the air on a large scale. Other nations followed suit; Chilean nitrate shipping was thereby reduced.

Prior to World War II the importation of silk, rubber and quinine from the Orient occupied a portion of the world's merchant marine (foreign ships carried up to 70 percent of our foreign trade). Now our synthetic plants can and do produce as much or more of these products or their substitutes as were formerly imported. Will we abandon our new industrise after Peace is declared? These industries are an integral part of the vast developments of science. Our way of life demands that we go forward, not backward.

Much of England's early ascendancy in the field of world trade was due to its textile industries. The raw materials were shipped from such producing areas as India, Egypt, Australia, Canada, Argentina and our own southern States to be processed in English mills. The inexpensive textiles were then marketed throughout the world. This arrangement seemed a

'natural.' It conformed to the theory that certain areas were destined to be producers of raw materials, while other areas were to process the materials with their machines powered by energy from deposits of coal or oil with which the manufacturing areas were fortunately endowed.

This 'natural' is now fighting for survival. Two things happened which upset the arrangement. First, the raw material countries found energy sources and developed the know-how to process their own materials for themselves; second, the chemist produced substitutes that compete on even or advantageous terms with the available products of nature. Witness the growing industrialization and self-sufficiency of Canada, Australia, India, Brazil, South Africa. Witness the development of the synthetic fibers, nylon and rayon, to compete with cotton and silk on such advantageous terms that our national government has chosen to subsidize the growing of cotton.

The Man Who Came To Dinner

The power that lies in the hands of the chemist has been terribly demonstrated by the war making powers of the so-called have-not nations. This power of chemistry is rising throughout the world, transforming an international trade economy into an economy of self-sufficient areas. Garett Garrett refers to this age of wonders as the 'Age of Alchemy.' The chemists, the technologists, the engineers have but begun to transform the economy of the world, and without themselves being economist, politicians, or financiers. The present and impending changes doom world trade as a source of either great profit or appreciable employment.

Before we indulge in attempts to stimulate world trade beyond its natural life, let us note the fateful ex-

ample of Great Britain's position. The expansion of British mercantilism was based on availability of mineral and energy resources for use in industry, the products of which would be sold profitably in world trade. Furthermore, Britain became the world's financial center and a creditor nation.

The war has reversed Britain's financial position. In order to meet war purchases and to keep exchange balances, Great Britain has been compelled to sacrifice practically all of its investments abroad. It has also gone into debt on a huge scale, especially to the Dominions. Exclusive of lend-lease with the U. S. and mutual aid with Canada, Great Britain is already in hock for her total exports, at the prewar rate, for 10 years. If Great Britain is to maintain its prewar export status and pay off its obligations to the bloc currency group alone (dominions exclusive of Canada), her postwar exports of net physical goods must be increased to over 800 million pounds. It is highly improbable that this can be done.

Britain's tin is gone; its copper is gone; the coal mines are going deeper and farther out to sea; the iron mines are going deeper and the ore is becoming poorer. Canada, Australia, South Africa and India are no longer export agrarian economies, but competing export manufacturing economies. The period that made Britain great is gone. Britain grew with the period of world trade and world exploitation. That period is gone, vanquished by the universality of science.

The dependency upon material found in natural existence was a normal step to man's conquest of materials. World trade was part of the mechanics necessary to make materials available for processing and redistribution. Scientists have changed that reliance on naturally existing forms of

matter, and with the change have altered the entire picture of world trade, making Admiral Land's predictions of increased use of the merchant marine for international trade but futile hopes.

Heretofore man has worked with the forms of matter as he has found them, adapting his ends to the limitations of the materials. Now the chemist works on the composition of the matter itself, not just its form, and by changing the nature of the molecule creates forms never found in nature. The many plastics are examples of this progress in science. No longer must ships plow the seven seas for fibers, for instance, when synthetics can be made from sand, coal and air, or many types of vegetable matter.

Science, not world trade, must provide the answer to the problem of full employment after the war. An area economy with scientific utilization of the resources will replace world trade. The way must be pointed out by the men of science, for only they can make a fully employed and prosperous nation after this war.

Instead of chasing after dead ducks like foreign trade, America needs to face its modern social problem in the light of the social aspect of Science. The facts of our problem are at hand. The solution is here. Even the blueprint of social operations is all set to go. In the social mechanics of operating a Continental Area for the benefit of the human components involved lies the answer. Geopolitics is dead. Long live Geotechnics!

Investigate Technocracy

'At every particular moment it is the dead rather than the living who are making history; for politically individuals think dead men's thoughts and pursue dead men's aims.'—Leonard Woolf in *Western Producer*, December 1945. (From Prince Albert, Saskatchewan Co-Ordinator, issue No. 29.)

TECHNOCRACY

NORTH AMERICA'S ONLY SOCIAL DYNAMIC

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this continent. It has no affiliation with any other organization, group or association either in North America or elsewhere.

★ The basic unit of Technocracy is the chartered Section consisting of a minimum of 25 members and running up to several hundred.

★ It is not a commercial organization or a political party; it has no financial subsidy or endowment and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are \$6.00 which are paid by the member to his local Section.

★ Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHERE?

★ There are units and members of Technocracy in almost every State in the U. S. and in all Provinces in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces.

★ Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHEN?

★ Technocracy originated in the winter of 1918-1919 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934, Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundations of the present nation-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHO?

★ Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life, Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this continent. Membership is open only to North American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective political office or active office in any political party.)

★ Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife—as long as you are a patriotic North American—you are welcome in Technocracy.

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